THE BRITISH PTERIDOLOGICAL SOCIETY

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The BRITISH PTERIDOLOGICAL SOCIETY was founded in 1891 and today continues as a focus for fern enthusiasts. It provides a wide range of information about ferns through the medium of its publications and other literature. It also organises formal talks, informal discussions, field meetings, garden visits, plant exchanges, a spore exchange scheme and fern book sales. The Society has a wide membership which includes gardeners, nurserymen and botanists, both amateur and professional. The Society's journals, the *Fern Gazette*, *Pteridologist* and *Bulletin*, are published annually. The *Fern Gazette* publishes matter chiefly of specialist interest on international pteridology, the *Pteridologist*, topics of more general appeal, and the *Bulletin*, Society business and meetings reports. **WWW site**: http://www.eBPS.org.uk

Membership is open to all interested in ferns and fern-allies. **SUBSCRIPTION RATES** (due on 1st January each year) are Full Personal Members £15, Personal Members not receiving the *Fern Gazette* £12, Student Members £9, Subscribing Institutions £25. Family membership in any category is an additional £2. Applications for membership should be sent to the Membership Secretary (address above) from whom further details can be obtained. (Remittances made in currencies other than Sterling are £5 extra to cover bank conversion charges.) **Airmail** postage for all journals is an extra £4, or for those not receiving the *Fern Gazette* £2.50. **Standing Order** forms are available from the Membership Secretary and the BPS web site.

(**Front cover**: *Cyathea dealbata*. Illustration from: G. Schneider (1893) *The Book of Choice Ferns*.)

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NATIONAL FIELD MEETINGS 2000

NEW ZEALAND – 11-26 February

Introduction [Alastair Wardlaw]

This excursion, held in New Zealand during summertime in the Southern Hemisphere, was a good opportunity to be away from Britain in February! At a distance of 11,500 miles from the UK, this magical antipodean country is about as far as one can get from what is home for most BPS members.

The excursion took place through the initiative and under the leadership of Jennifer Ide. It was she who not only had the idea for an excursion to New Zealand (as others had also had), but who found the time and energy to turn the idea into a reality. Jennifer also shouldered the detailed planning of numbers, logistics and costs during the two years of preparation beforehand. On the trip itself she was always to hand with the daily programme magically photocopied, cheerfully answering questions and giving advice. In the event, everything passed off smoothly and without untoward occurrences, except for one medical emergency early on, which was dealt with calmly and efficiently. The excursion was multinational, with representatives from Australia, Belgium, France and USA in addition to a majority of British members – a total of 24 participants.

photo: J.M. Ide

Cyathea medullaris, Arthur's Pass Road, New Zealand.

The excursion provided a very full fortnight of fern hunting and getting to know well over half of the *c.*200 species of New Zealand pteridophytes. In this we were greatly helped by Jennifer having organised the services of local fern experts to act as guides at the numerous sites we visited. Beforehand, the experts also provided checklists of what to expect at the different places, so we could do some homework ahead of the site visits. Best of all, they took us to favoured locations for ferns and could tell us on the spot which of the 17 species of *Blechnum* or 22 species of *Hymenophyllum* we were looking at. For more leisurely identifications, many of us had the excellent book by Brownsey & Smith-Dodsworth (1989): *New Zealand Ferns and Allied Plants*.

Aside from the pteridology, the excursion also provided fascinating insights into other aspects of the flora and fauna, and into the history, geography and culture of New Zealand. Thus most of us started out being unfamiliar not only with the ferns, but also with the rest of the vegetation, particularly the trees. But soon we found ourselves coming to grips with Maori names like rimu, kauri and totara for three of the common and majestic species of large trees under which the ferns were growing.

New Zealand spreads across latitudes equivalent to Southern France, Spain and North Africa in the Northern Hemisphere, but it has a much wetter climate. The distinctiveness of the New Zealand flora derives from its geographical isolation from other major land-masses: the nearest is Australia which lies over 1,000 miles to the west. About 40% of New Zealand's ferns are endemic, that is, do not occur naturally elsewhere. Very few of them are available commercially in the UK, but the BPS spore list usually contains a fair selection of New Zealand species.

Christchurch and Port Hills (Saturday 12 February)

The excursion started on Friday 11th February, in the Country Glen Lodge Motel in Christchurch, the largest city on the South Island of New Zealand. Weather in Christchurch that day had been fine, sunny and about 20°C, with a moderate wind. Some members of the party had arrived a few days previously and had visited the Botanic Gardens which has a useful collection of New Zealand ferns, some of which grew in a fern house with walls made from tree-fern trunks. My wife and I had flown in from Australia that afternoon, while some others did not get in till near midnight. When we assembled on the Friday evening, introductions were made, old friends feigned surprise at meeting each other in such a faraway place, and then Jennifer briefed us on the programme for the next few days.

The next morning, after an early start to pick up the six pre-arranged hire cars, we made our way southwards out of Christchurch to the rendezvous point, about 30 minutes away in the Port Hills on the edge of the Banks Peninsula. Here we were met at the Sugar Loaf Viewpoint by the first of three fern experts who had migrated from the UK to New Zealand, Professor John Lovis of the University of Canterbury in Christchurch. It was a good place to take pictures of the city of Christchurch, about 500 metres lower in altitude on the Canterbury Plain below. A harrier hawk made purposeful passes across the grassy landscape.

The excursion proper started a short drive away at Mount Cavendish, which at first looked somewhat unpromising for fern hunting. The scene was of parched, rolling hills, with long yellow grass and no sign of water. But it was a special habitat – what John Lovis called a 'hot-rock site' on account of the dark basaltic outcrops taking up the sun's heat and, one would have thought, cooking the adjacent vegetation. Nevertheless, ferns lurked in the crevices, and quite abundantly too. A stroll down the tarmac road in the squintingly bright light soon revealed a total of nine species of fern in the roadside rocks and banks. There was a good-sized patch of the New Zealand bracken, *Pteridium esculentum*, in the dry grassland below the road. This plant is much more wiry than our British species and has primary and secondary rachises of a prominent orange-brown colour. Then, in the rocky

embankment at the roadside, we found the delightful *Pleurosorus rutifolius*. Much film was expended on this rarity, which John Lovis said would usually have shrivelled by this date but had been preserved by an unusually wet summer. Unfortunately, this was the only time we saw *Pleurosorus* on the whole excursion. Nearby were two species of *Cheilanthes*, *C. sieberi* (= *humilis*) and *C. distans*, and also *Pellaea calidirupium*. A familiar-looking *Polypodium* was, we were assured by John Lovis, none other than *P. vulgare*, which he described as 'adventive', i.e. introduced. We also saw our first New Zealand *Polystichum*, *P. richardii*, which subsequently became a common sight. Considerable pleasure was generated by finding two ferns that were not on the expert's list for that locality, *Asplenium flabellifolium* and *A. terrestre*.

Our second site was nearby, on the Lyttelton Reserve at Mount Pleasant, about 500m altitude. A short walk uphill through grassland brought us to the base of a south-facing and therefore (in the Southern Hemisphere) shaded, basalt cliff and led into scrub woodland, where altogether the fern flora expanded to 22 listed species. There was moisture in deep crevices in shady rocks and small gullies, and further shelter in shallow caves and behind bushes. It was also a place of great scenic beauty, with the azure waters of Lyttelton Harbour a long way below and surrounded by the crater rim of an extinct volcano. This was the view where subsequently we enjoyed our packed lunches, with musical entertainment from bellbirds. Here we had our first taste of the richness in blechnums and aspleniums, which is such a feature of the New Zealand fern flora. In a short distance along the base of the cliff and into the woodland there were *B. chambersii*, *B. fluviatile*, *B. montanum*, *B. vulcanicum*, *B. procerum* and *B. procerum/capense* complex, plus *Asplenium flabellifolium*, *A. gracillimum*, *A. hookerianum*, *A. lyallii* and *A. terrestre*. Rather stunted *Rumohra adiantiformis* grew in rock crevices, while *Phymatosorus diversifolius* scrambled epilithically, its strap-shaped fronds becoming pinnate as they enlarged. Among other delights were the minute *Grammitis ciliata*, the familiar house plant *Pellaea rotundifolia*, the unfamiliar *Adiantum cunninghamii* and more *Polystichum richardii*. The expert's list for the locality had five species of *Hymenophyllum* on it, all marked as rare. Of these, *H. multifidum* and *H. rarum* were observed by some, but I personally did not see them. The path also gave us our first sight of the fearsome-spined New Zealand nettle, *Urtica ferox*, a prickly bush whose sting was said to be severe. On the plus side it is a food plant for red and yellow admiral butterflies.

After lunch, our third location was a few kilometres away at Ohamu Bush Reserve, near Gibraltar Rock. Here the roadside bank was rich in the common blechnums – *B. fluviatile*, *B. chambersii* and *B. discolor*, and aspleniums – *A. gracillimum*, *A. hookerianum*, *A. flabellifolium* and *A. terrestre*, with possible hybrids (as if the *Asplenium* flora wasn't complicated enough!). We steered well clear of the deadly *Urtica ferox* that was present in abundance at the roadside. After a short, but photographically prolonged, walk up the road, we entered the wooded Omahu Reserve, which had only recently been fenced off from cattle and sheep and had therefore not reached its full species diversity. For example, tree-ferns (*Cyathea smithii* and *Dicksonia squarrosa*) were present only as very young and untrunked plants. Although our eyes were on the ferns, we could not help noticing that the trees also deserved attention. There was a large tree fuchsia (*Fuchsia excorticata*) with distinctive, peeling, bright reddish-brown bark and a species whose common name was 'five fingers' (*Pseudopanax arboreus*). Our second *Polystichum*, *P. vestitum*, with its shining green fronds was prominent. The track through the Reserve was mostly through woodland and contained numerous pteridological delights, such as the long tresses of *Asplenium flaccidum* hanging epiphytically from branch bases high up in trees, the very finely-divided crape fern, *Leptopteris hymenophylloides* (a member of the Osmundaceae), *Leptolepia novae-zelandiae*, the *Hypolepis* species, *H. millefolium* and *H. rufobarbata* and finally, the scrubby and tangled *Paesia scaberula*, which we were later to see elsewhere.

On reassembling at the exit from the Reserve, Jennifer thanked John Lovis for all his efforts during the day and for providing such rich insights into New Zealand ferns.

Christchurch to Arthur's Pass (Sunday 13 February)

The second day differed from the previous one in being less structured, in having no local guide, and in giving us, after midday, very wet weather on the high ground at Arthur's Pass. Our route was westwards out of Christchurch and across the Canterbury Plain, an agricultural region. The route went across rivers with the braided gravel bars in midstream that are so characteristic of New Zealand. We were also introduced to another recurring feature of New Zealand rivers, namely the single-track road bridges, where driver priority-direction alternates on successive bridges along the route. The terrain had by now become mountainous, with long screes reaching to the tops, and lupins and viper's bugloss by the roadside. It was an empty land, with no farms, homes or villages. The first scheduled stop was at Lake Lyndon, in the foothills of the Southern Alps at an altitude of 850m. Here the attraction was *Pilularia novae-zelandiae* on two stony lakeshore sites. The party divided; both groups found what they thought might be *Pilularia* but which turned out to be a deceptive monocot.

The next stop was at Castle Hill, a 'karst' landscape at 900m, consisting of tall and oddly-shaped limestone outcrops on hilly grasslands. Part of the group was taken around by a very knowledgeable Maori guide from the Parks Service who pointed out rock paintings in charcoal and a white pigment. Among the ferns were the tiny, epilithic *Grammitis patagonica*, *Cystopteris tasmanica*, and relatively abundant *Asplenium lyallii* in hollows and fissures in the limestone. A single plant of *Blechnum chambersii* was recorded. Another botanical feature of the site was the strange *Aciphylla squarrosa*, a spiny umbelliferous plant that the Maoris gathered for its roots, which were steamed. The day had been dry so far.

We checked into the isolated Bealey Hotel, an oasis of habitation in an otherwise empty land, with a stone moa outside. From there it was a short distance through forested country to Arthur's Pass Village where the Visitor Centre provided shelter as rain came on. The torrential rain and strong wind did not stop some of us from driving the extra few kilometres to Arthur's Pass Summit, at 940m. Here, at the start of Dobson Nature Walk, ours were the only cars in the car park, not surprising in view of the weather which was not welcoming for walkers. *Polystichum vestitum* and a new blechnum, *B. penna-marina*, were abundant, together with *B. montanum*. There were also two lycopodiums, *L. scariosum* and *L. fastigiatum*, creeping through the other vegetation, and a *Hypolepis*, probably *H. millefolium*. The route took us uphill through subalpine scrub, which would have been very heavy going without the gravel track and boardwalk sections through it. *Hymenophyllum villosum* was common on the ground, while *Grammitis patagonica* was quite abundant as an epiphyte. We found a single patch of *Lycopodium australianum*. Among the angiosperms there was a white-flowered gentian and the large-leaved *Ranunculus lyallii*. After beating a retreat from the deluge on the high ground, we returned to the hotel to change into dry clothes and then some had a walk, not scheduled on the programme, in the nearby Waimakiriri Forest. This yielded several blechnums, *Polystichum vestitum*, abundant *Grammitis* (possibly *G. billardierei*) on earth banks and two species of filmy fern.

Arthur's Pass to Hokitika (Monday 14 February)

On the third day we left the Bealey Hotel in rain and mist and drove along the mostly well-surfaced, but unreliable road through Arthur's Pass. This road is noted for being liable to closure in the winter because of snow and at all times because of washout or blockage due to piles of rock that come down the steep and unstable slopes on either side. Having crossed the Pass, the countryside became open and rolling. For the first time on the

expedition, tree-ferns became prominent, and then abundant, in the woods and clearings. Initially they were *Dicksonia squarrosa* but we also saw a few *D. fibrosa*, with their bulky skirt of unshed, withered fronds. Less abundant was *Cyathea smithii*, easily recognised by its skirt of cane-like stipes and rachises denuded of laminae, and *C. medullaris*, majestic with its thick black stipes and large stature. Our destination, after the 114 km drive, was the jade centre of Hokitika on the west coast. Here, mid-morning at the Visitor Centre, we were enthusiastically welcomed by two ladies from the Nelson Fern Society, Edith Shaw and Pamela Serett. They provided each of us with bulky information packs and then Edith gave a general talk about the district and its tourist attractions.

After lunch, we all rendezvoused with Edith and Pamela at Lake Kaniere (150m alt.), about 15km from Hokitika, where we took the Kahikatea Walk through mixed 'deciduous/podocarp' forest. The sign at the start of the walk described it as requiring ten minutes, but not for pteridologists who have to stop every few paces; I believe it took us two hours. Additional to the ferns, we had some of the prominent trees identified for us: lancewood, in its juvenile form with downward-pointing narrow leaves at the apex of the trunk, rimu, with graceful weeping foliage and white pine, actually a podocarp. The forest itself was a fairyland of ferns. At the entrance was a colony of *Phymatosorus diversifolius*; there was also a delightful spread of *Sticherus cunninghamii*. Many of the ferns had already been seen on the previous two days and were becoming slightly familiar. There was *Blechnum discolor*, with its silvery underside on each frond, *B. novae-zelandiae* – the largest of the blechnums, *B. fluviatile* with rounded pinnae, *B. chambersii*, the nearest to our *B. spicant*, and *B. nigrum*, rather inconspicuous on the forest floor. Other ground ferns were *Histiopteris incisa* – the batwing fern, *Paesia scaberula* in a forest clearing, *Pneumatopteris pennigera* and the delicate *Leptolepia novae-zelandiae*, along with abundant *Asplenium bulbiferum*. Two other ground ferns that gave especial pleasure were the crape ferns, *Leptopteris hymenophylloides* and *L. superba*, the latter known as the Prince of Wales Feathers. On a rotting branch, *Pyrrosia eleagnifolia* was spreading its small ovate leaves from creeping rhizomes, while above head height were the tree-ferns, mainly *Dicksonia squarrosa* and *Cyathea smithii*. Among the epiphytes, the primitive fern-ally, *Tmesipteris elongata*, caused some excitement and was much photographed. We also saw a good selection of filmy ferns, both *Hymenophyllum* species – *H. dilatatum*, *flabellatum*, *ferrugineum*, *demissum*, *multifidum*, *sanguinolentum*, *scabrum* and *villosum*, and *Trichomanes* – *T. venosum*, with a prominent bristle in each sporangium and *T. reniforme*, the kidney fern, scrambling up trees like ivy in British woodland. Other epiphytes were *Ctenopteris heterophylla*, *Rumohra adiantiformis*, *Asplenium flaccidum* and *A. polyodon*. The feeling at the end of this walk was that we were gaining good familiarity with many of the ferns that only three days previously had been quite strange.

[Sylvia Martinelli]

The West Coast

The central portion of the western side of South Island is dominated by the high mountains of the Southern Alps, whose flanks form the west coast line itself. These mountains are sedimentary rock called greywacke, made by compression of sand under the sea; other sedimentary layers of mud and silt forming white quartz and feldspar are interposed. The prevailing winds are caught on the west coast, depositing their heavy burden of rain all the year round. The proximity of the mountains to the sea makes this a very wet and ferny area, with a low population of humans and even of sheep.

Hokitika to Fox Glacier (Tuesday 15th February)

The West Coast of New Zealand would be better named the Wet Coast, for it rains on average five days out of seven throughout the year. It was to live up to its reputation for our two days there! The trip from Hokitika to Fox Glacier township took 2½ hours along a road sandwiched between grey sea and a grey, wet, wooded but otherwise almost featureless

photo: R.G. Ackers

Pamela Serrett and Edith Shaw.

landscape, only relieved by glimpses of grey mountains through occasional clearings in the mist and rain. *Blechnum novae-zelandiae* clothed the roadside banks, while *Dicksonia squarrosa* and *Cyathea smithii* were much in evidence in the forest flora.

After morning coffee in Fox Glacier, we parked in a lay-by on the edge of the town, on the main north-south coast road, and gathered in the pouring rain at the beginning of the Minnehaha forest track to listen to Edith's description of the site and its flora. The edge of the forest burgeoned with *Polystichum vestitum* and the ever present *Blechnum novae-zelandiae*, conifers such as *Prumnopitys ferruginea* (Miro/brown pine) and *P. taxifolia (Matai/black pine)*, angiosperm trees and shrubs such as coprosmas, pittosporums, *Metrosideros umbellata*, the occasional *Pseudopanax* sp. and several other species including *Dicksonia squarrosa*, which formed the canopy of the forest, whilst *Cyathea smithii* was abundant as an understorey tree. Species of *Metrosideros* usually begin life as an epiphyte perched on a host tree and develop as a liane. Their aerial roots grow down towards the ground, gradually enclosing the trunk, whilst the branches eventually develop a large crown which suffocates the crown of the host. Eventually a large, self-supporting tree is produced. Some species reach massive proportions. New Zealand boasts a number of *Metrosideros* species, commonly known as ratas, which are a profusion of red or white blossom in season. *Nothofagus* species, the southern beech as they are popularly known in Europe, are not present in this area hence its description as 'beech-poor' by Edith.

After half an hour we were no further than five metres from the start of the walk, so rich was the forest in ferns, especially filmy ferns, which, of course, were all still unfamiliar to the majority of the party. Some were exquisitely tiny and required close-up viewing with a hand lens to appreciate their distinctive characters. Tutoring a group of twenty people on filmy ferns in the field can be a long task! Gradually, the party dispersed further into the forest, leaving those interested in the minutiae of *Tmesipteris*, *Hymenophyllum* and *Grammitis* species. I was lured by the carboniferous look of the thick vegetation, thick tree-trunks at odd diagonals leaning on hapless tree-ferns, and many fallen nurse trees in the swampy ground. The fallen tree-ferns ran along the ground then turned up through 90 degrees making a comical sight. Everything was covered in a lurid green film of moss, lichen, leafy liverworts, epiphytic ferns and flowering epiphytes including orchids. No hint of grey or brown bark was visible. This surely must be quite one of the most verdant places to be found, and yet quite spooky in the drizzling rain.

When the translucent round fronds of *Trichomanes reniforme*, swathed around many tree-trunks, caught the light, the sight was breath-taking. Interestingly, few fronds bore spores, and this held for all locations in which we found this species. One huge old trunk of *Weinmannia racemosa*, with its pittosporum-like leaf, was covered in a multitude of epiphyte species, the ferns including *Hymenophyllum flexuosum*, *H. ferrugineum* (olive-

coloured with gold hairs), *H. flabellatum* (with bright green pinnae reminiscent of *Asplenium flabellifolium*), *A. flaccidum* subsp. *flaccidum*, *Ctenopteris heterophylla*, *Phymatosorus diversifolius* and *Grammitis billardierei*. Astelias, with their narrow, grass-like leaves predominated among the angiosperms. Despite the damp, there were fewer *Asplenium flaccidum* than one might have expected, but *A. bulbiferum* was prolific, though rarely with bulbils; could it have been *A. gracillimum* with which it can be readily confused by the newcomer to the New Zealand flora? Even the tree-ferns were clothed in epiphytes: *Rumohra adiantiformis* grew amongst the dead fronds of *Dicksonia fibrosa* along with two species of *Hymenophyllum*. These tree-ferns (*D. fibrosa* and *Cyathea smithii*) grew to 7 to 8 metres in height, although there were many young specimens mingled with a lot of young *Schefflera* plants. The constant year-round heavy rainfall meant that even large ground dwelling ferns, such as *Asplenium bulbiferum* and *Blechnum fluviatile*, could grow as epiphytes. It was a surprise to hear the cicadas 'singing in the rain'!

Alongside the bank of the creek, which the track followed for some distance, were plants of *Blechnum discolor*, *B. colensoi* and giant clumps of *Pneumatopteris pennigera*, the giant aspect of the *Pneumatopteris* suggesting that they really like a good dowsing. A tunnel of trees covered the stream, all dripping with epiphytic hymenophyllums and moss and lichen streamers. A 'drunken' tree-fern, held up by a *Schefflera*, was laden with three foot long *Tmesipteris* plants!

This extremely beautiful forest was one of the ferniest ecosystems we were to visit on the excursion in terms of both the number of species and general abundance of ferns. Amongst the many hymenophyllums noted were *H. demissum*, *H. ferrugineum*, *H. flabellatum*, *H. flexuosum*, *H. multifidum*, *H. revolutum* and *H. scabrum*. Another epiphytic filmy fern was *Trichomanes venosum*. On the ground grew more *Blechnum* species: *B. chambersii*, *B. fluviatile*, *B. penna-marina* and *B. nigrum*. The *B. nigrum* looked exactly that and was rather small, insignificant and difficult to find, growing as it did away from the path. *Leptopteris superba* abounded in some areas and though scruffy compared with plants seen elsewhere, was nevertheless fascinating with its feathery olive green fronds. One of these

photo: J.M. Ide

Forest on Minnehaha Walk, Fox Glacier, New Zealand.

Prince of Wales ferns seen by the stream had perhaps 20-30 fronds and measured two metres across. *Asplenium polyodon* was hiding amongst tree roots but also occurred as an epiphyte with fronds up to one metre long. Other members of the party spotted *Leptolepia novae-zelandiae*, *Phymatosorus diversifolius* and *Lycopodium varium.* A pond was found with a profusion of enormous tadpoles, apparently of the Australian whistling frog. *Tmesipteris elongata* and *T. tannensis*, these fascinating epiphytic ferns lacking roots, were both found. *T. elongata* is distinguished by the rounded distal ends of its sporangia and tapering leaf apices, whilst *T. tannensis* has pointed sporangia and blunt leaf apices ending in a long spine-like tip.

Our next site was a tourist path descending by steps to a bridge over the Fox River which gave a view of Fox Glacier. There were fewer species to be seen along this path compared to the Minnehaha track and only two new species were recorded: *Blechnum vulcanicum* and *Lastreopsis hispida*. There was the chance for those who did not see it on the Minnehaha track to see *Blechnum colensoi*, the waterfall fern, in its typical habitat, its fronds hanging down the steep, perpetually dripping, wet banks that flanked the path. *Asplenium polyodon* was seen as a terrestrial fern, its more typical habit in the far south of New Zealand; in the rest of the country it is more commonly epiphytic. As we walked along the path we were enveloped in the heavenly scent reminiscent of benzoic acid belonging to the epiphytic Easter orchid, *Earina autumnalis*, its long drooping inflorescences just coming into bloom. At the bottom, the suspension bridge crossed a glacial torrent milky with suspended rock flour. This walk ended with another of Edith and Pam's delightful teas of home-made cakes.

We arrived at the car park for Lake Matheson in pouring rain and set off to walk around the lake after admiring the bank of *Blechnum vulcanicum* and *Sticherus cunninghamii*, among which were two or three specimens of *Cyathea colensoi*, along with the ever present *Paesia scaberula* and *Histiopteris incisa*. *Cyathea colensoi* is a prostrate(!) tree-fern, with distinctively hairy upper leaf surfaces and lower surfaces with red stellate hairs. Not far into the walk, in the forest, *Lindsaea trichomanoides* was seen by those privileged to understand a much corrupted word of mouth message passed between groups of drenched, struggling fern-hunters! Other species new for the day were *Blechnum procerum*, *Cyathea dealbata*, *Diplazium australe*, *Hymenophyllum rarum*, *H. sanguinolentum*, *H. villosum*, *Hypolepis ambigua*, *Lycopodium volubile*, *Pteridium esculentum* and *Pyrrosia eleagnifolia*. *Trichomanes reniforme* was particularly abundant, both as an epiphyte and terrestrially. Noisy frogs were heard but not seen in the river which was never far from the path. Few members actually made it to the lake, for by now most had had enough of the incessant drenching rain; careful observation, let alone recording by note or photograph was impossible; the car park café was much more inviting! A pity, for Lake Matheson is one of a number of chocolate-box views to be found in New Zealand.

Fox Glacier to Westport (Wednesday 16 February)

Overnight 15cm of rain fell causing the rivers to swell to brown torrents, and it was still falling when we left to drive to Westport, the trees and mountains again wreathed in cloud, not encouraging roadside touristic or ferning stops. The forests were full of tree-ferns and the 'silver birch-like' *Nothofagus menziesii* became increasingly common as we travelled north. Near Franz Joseph Glacier snow was seen on the tops of the mountains when the mist cleared and a good view of the glacier could be had from the road. In between the zones of forest were damp meadows with abundant *Rumex*, flag iris, pampas, *Phormium tenax*, cordylines, senecios, *Juncus* and grazing cows, inter-mixed with patches of maquis-like vegetation. Less attractive were the conifer plantations and the non-native *Eucalyptus* planted along the road. In pockets protected from the sea-breezes tree-ferns flourished, but in the direct wind, trees took on an alpine, 'krumholz' appearance.

After coffee in Hokitika, around which town *Cyathea medullaris* reappeared, we continued north, driving straight through the aptly named Greymouth to Punakaiki. From Greymouth the road runs close to the coast, the sea never being far from sight. The vegetation changed rapidly from 'maquis' to reed swamps and broadleaf woodland undergrown with *Blechnum novae-zelandiae*. Along the seaward side of the road were tree-ferns, and irids were common. The bush on both sides was full of alien gorse, heather and spectacular yellow-flowered hedychiums. Towards Punakaiki, we had our first sighting of the nikau palm (*Rhopalostylis sapida*), New Zealand's only native palm, often growing in groves. Also characteristic of this area are the tall thin trunks of *Cyathea cunninghamii* in the mixed forest. Abundant *Paesia scaberula*, *Pteridium esculentum* and cordylines (cabbage trees) typify the roadside vegetation. A tumbling hillside of *Phormium* sp. (New Zealand Flax) and *Dracophyllum* spp. was noteworthy.

We arrived at Punakaiki in time for lunch and afterwards, in the pouring rain, we walked the spectacular track through the narrow belt of forest to the famous Punakaiki rocks and blowholes. These horizontally layered limestone rocks, strangely stacked and sculptured, are eroded so that they appear like giant stacks of grey pancakes, hence their popular name, 'pancake rocks'. The proximity of the sea is probably responsible for the curious appearance of the coastal vegetation which was wooded close to the road, the dominant tree species being tree-ferns (mainly *Dicksonia squarrosa*), nikau palms and *Weinmannia racemosa*, gradually becoming more open towards the sea, where *Phormium cookianum*, with leaves standing up to two or more metres in height, was common, along with the persistent nikau palms. It was perhaps the most fascinating site of our visit, so different was it. Apart from the tree-ferns it had something of the appearance of a Mediterranean garden which had gone wild. Of particular interest in the open communities were *Asplenium oblongifolium* and *A. obtusatum*, both typical coastal ferns, the latter particularly enjoying salt spray, and in the closed woodland community a *Pteris*, known about for many years but still as yet unnamed. Also seen in the woodland were *Adiantum cunninghamii*, *Blechnum chambersii*, *Asplenium bulbiferum*, *A. polyodon*, *A. flaccidum*, *Rumohra adiantiformis*, *Phymatosorus scandens* and *P. diversifolius*, the latter five all being epiphytes. It was useful finding the two *Phymatosorus* species growing in close proximity as it allowed one to grasp the differences between them. The fronds of *P. diversifolius* are morphologically more varied than the pinnatifid, narrowly segmented fronds of *P. scandens*. More readily distinctive, however, are the rhizomes, fleshy green with dark appressed scales in *P. diversifolius* and much thinner with erect dark scales in *P. scandens*. The latter is also more frequently totally epiphytic.

The stiff upward pointing leaves of the nikau palms provide little shade and few attractive niches for epiphytes. The old fronds of the palm fall to the ground complete with their huge leaf bases, so woe betide any animal or plant they happen to fall on!

Just north of Punakaiki we followed the Truman Track through the coastal forest; still it was pouring with rain! This was another weird jungle with tree-ferns, including *Cyathea cunninghamii*, which we were seeing today for the first time in any number. Many of the ferns we now recognised as common in South Island were present, but among the more interesting were the epiphytic *Tmesipteris elongata* and *T. tannensis*, many *Hymenophyllum* species (always a fascination to pteridologists from western Europe and possibly the Americans amongst us), *Asplenium gracillimum* (smaller and usually non-bulbiferous compared to *A. bulbiferum* of which it was once considered a subspecies), and the delicate ground dwelling *Lindsaea trichomanoides*. Also of note were *Anarthropteris lanceolata*, a low growing epiphyte of coastal areas in South Island, *Lastreopsis hispida*, and *Pyrrosia eleagnifolia*, a succulent high epiphyte well adapted to dry conditions as we were to note in the drier North Island where it was common. When the track emerged onto the coastal cliffs

we found *Asplenium obtusatum* and *Blechnum blechnoides*. An interesting side track from the main one took one into a totally different type of community with *Podocarpus totara* and *Dacrydium cupressoides* as the dominant species, both magnificent trees capable of reaching 30 metres and important timber trees; the ground vegetation was almost a pure sward of *Blechnum discolor* stretching throughout, a truly amazing and beautiful sight. The reason for this sudden and local change in the vegetation we did not know, but a change in soil type might be responsible.

Cape Foulwind was so named by Captain James Cook because of the contrary winds he experienced there and not because of the foul fishy smell, carried on the wind, emanating from its famous seal colony! In the evening light, the rain at last having stopped, this was a fitting place to end the day's ferning. Expecting to just drool over a fur seal colony, we also found many ferns on the seaside rocks and cliffs. However, one first had to escape the attentions of the rather insistent wekas (a scrub hen) before starting up the cliff path. On the cliff-like banks were small clumps of *Blechnum blechnoides* and *Asplenium obtusatum* which delight in this maritime exposure, as well as many other, by now familiar, ferns.

Westport to Nelson (Thursday 17 February)

This could be called the Cornwall of South Island except that it has none of Cornwall's bleakness. The coast appears gentle with less strident mountains behind it and supports a much larger human population than the whole of the long west coast of New Zealand. It is famous for hippy-like settlements, potters, artists, market gardens, and above all, fine Sauvignon Blanc! The vegetation in this mildest of districts harbours some northern species at their southern-most limit and *vice versa*.

We left Westport for Nelson, the road turning directly inland and following the long, winding Buller River valley through farmland, mostly down to grazing pastures and large plantations of the non-native *Pinus radiata*, especially on the second half of the journey to Nelson. Any evidence of native vegetation for approximately the last 50 miles to Nelson was sadly lacking. This change in land use is a reflection of the increasingly drier climate as one leaves the West Coast and travels east across South Island. A common and abundant weed is the European gorse. The principal roadside fern was *Blechnum discolor*, but the usual opportunistic group were apparent as well: *Paesia scaberula*, *Blechnum novae-zelandiae*, *Pteridium esculentum*, and several of us, despite the pressure of time, felt we must stop to photograph cascading *Lycopodium volubile* on the roadside cutting of the pass. Paul Ripley and Michel Boudrie were more persistent and also found *Blechnum penna-marina*, *B. vulcanicum*, *Ctenopteris heterophylla*, *Phymatosorus diversifolius*, *Grammitis* sp., *Hypolepis rufobarbata*, *Dryopteris affinis*(!) and *Polystichum vestitum*.

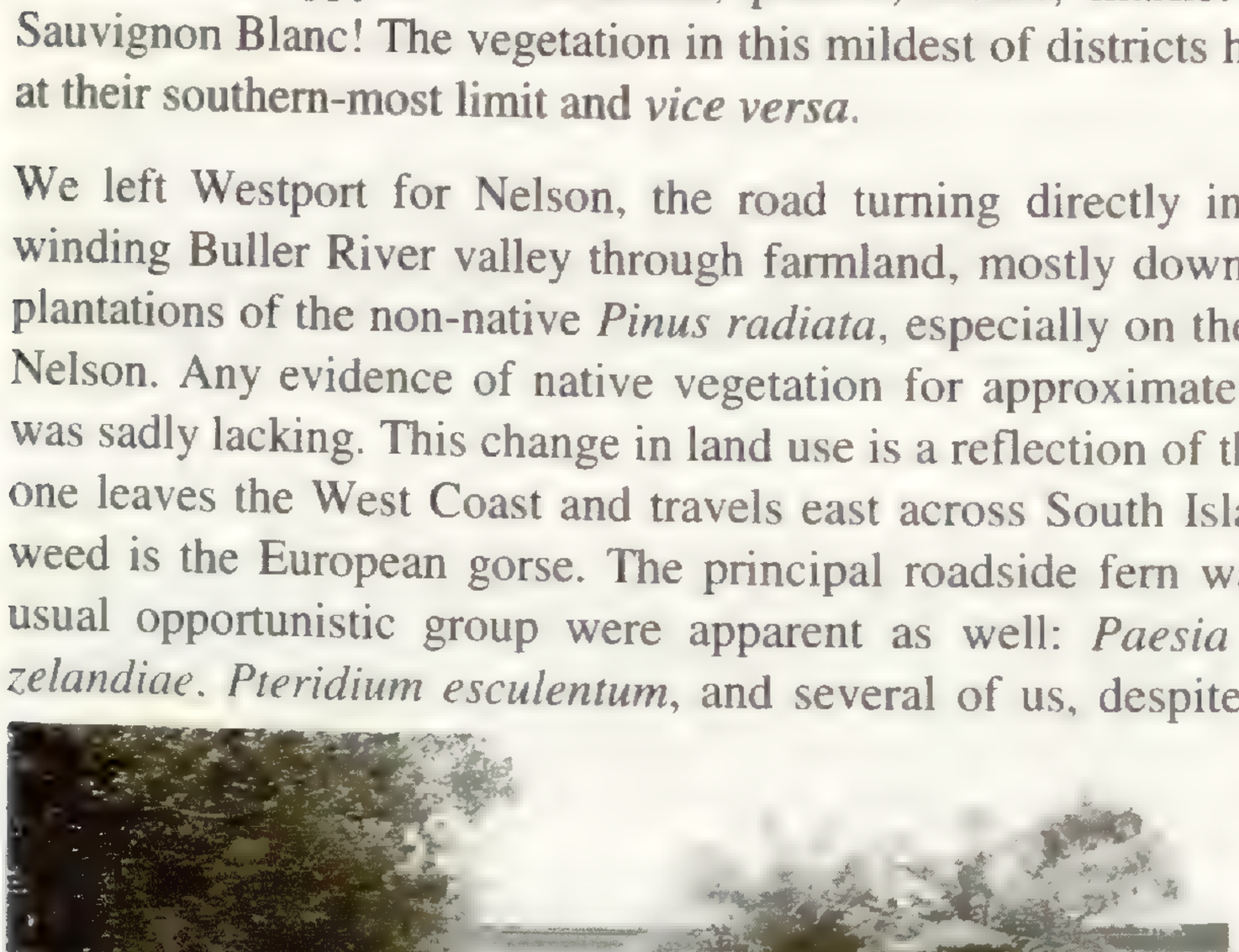

photo: A.M. Paul

Jacques Homès and Esther Balasse in front of Eileen Heatherbell's fernery, Richmond, New Zealand.

Eileen Heatherbell's garden at Richmond, near Nelson, was our first official stop of the afternoon. A small, formally laid out suburban

garden, it contained so many surprises. To one side of the house, under a glass roof, was a bed waist high with ferns, which collection anyone would envy. *Dicksonia squarrosa* trunks, some sprouting, formed the walls of a fernery roofed over with two layers of shade netting. Inside, a path wound between slightly raised, terraced beds containing such treasures as *Pellaea calidirupium*, the so-called hot-rocks *Pellaea* seen at Port Hills. It was pleasing to see the native *Nephrolepis hirsutula*, *N. cordifolia*, an alien, being so much more common in the wild and in cultivation. It seemed that all imaginable was there, from tree-ferns to epiphytic *Pyrrosia eleagnifolia*, and all attractively displayed.

A number of the party went to see the Marsden Valley Road Nelson Area School's re-vegetation project overseen by Edith. The area contained its original native trees, which included the large, spreading *Melicytus ramiflorus* in flower, giving a heavy jasmine scent to the air, and the small, dense shrub, *Macropiper excelsum* with its heart-shaped leaves. The aim of the project was to re-introduce as many as possible of the herbaceous plants that had died out. These included many ferns, such as the smooth *Lastreopsis glabella* and velvety *L. velutina*. The climbing *Blechnum filiforme* and *Phymatosorus scandens* were particularly abundant. Other species seen included *Blechnum chambersii*, *B. penna-marina*, *Polystichum richardii*, *Pellaea rotundifolia*, *Phymatosorus diversifolius*, *Asplenium flaccidum*, *A. hookerianum*, A. *oblongifolia*, *A. gracillimum*, *A. bulbiferum*, *Pteris tremula*, *Pneumatopteris pennigera* and *Pyrrosia eleagnifolia*. Dense shade, rotting twigs and leaves on the ground, few plants on the floor other than ferns and the deafening shrill of cicadas gave the area a genuine feel.

Another party went to the Nikau Native Plant Nursery in Nelson, where Michael Crawford showed them around. The quality of the plants was particularly impressive and it was useful to be able to compare at close hand young plants of *Dicksonia lanata* (not yet seen in the wild), *Cyathea cunninghamii* and *C. dealbata*.

That evening we had a group supper at the Quayside Restaurant with Edith and Pam, after which we joined the Nelson Fern Society in Jaycees Hall at Founders Park, a restored village. Several of us had taken photographic slides of ferns from different parts of the world and we gave a series of short presentations. Alan Ogden treated us to ferns of Canada, Graham Ackers – Macaronesia, Michel Boudrie – French Guyana, Sylvia Martinelli – Chile, Ken Wilson, some rare ferns of Hawaii, while Jennifer Ide described a sample of the large range of varieties of British ferns in cultivation in Britain. Afterwards, members of the NFS provided a feast of home-made cakes and savouries.

Nelson to Blenheim (Friday 18 February)

To the left of one of the main gates of Queen's Park Gardens in Central Nelson is a large area reclaimed in recent years from a neglected area surrounding an old public toilet block. The overgrown, rank vegetation was removed with the volunteer help of prisoners from the local prison under the supervision of Edith Shaw. Only the healthy trees, including some large sequoias, were retained. The soil was very poor and a huge effort was directed into bringing in rotting tree-trunks from the wild to act as nurseries for epiphytes and to encourage mycorrhiza and soil decomposition bacteria. Once ready to receive plants, again under Edith's supervision, members of the Nelson Fern Society planted the area with native New Zealand ferns; a vast project requiring many hundreds of plants. Now mature, it is a most impressive planting, with the ferns in magnificent condition, but the sad thing is that, like gardens accessible to the public anywhere, plants are frequently stolen and so relatively rare species, such as *Anarthropteris lanceolata*, have had to be removed to a place of safety, since they cannot be continually replaced. For the same reason, none of the plants are labelled. We were delighted to be allowed to collect spores here. Some of us met centenarian (104 years, to be exact) Irene Thomas, the patron of the Nelson Fern Society. After visiting the fernery, some members took the opportunity to visit the garden of Joy

Bonnington, another long standing member of the NFS with an outstanding collection of ferns, while the rest spent more time in Queen's Park Gardens, admiring its many mature trees, native and otherwise, its attractive lake and noting the Boer War memorial.

From Nelson we made our way to Pelorus Bridge Reserve in a limestone area about halfway between Nelson and Picton. After lunch we saw a grove of very old and magnificent *Dicksonia fibrosa* famous for their multi-trunks, a phenomenon not usually associated with this species. We then crossed the road and, accompanied by members of the Nelson Fern Society, followed a circular track through typical lowland beech (*Nothofagus*) forest bisected by the Pelorus River. Here, for the first time for many days, it was dry underfoot and not raining overhead! Bright purple *Dianella nigra* berries, on their cotton-fine stems amidst lily-like leaves, provided colour in the floor vegetation and *Dacrydium cupressoides*, rimu, much more common on the wet West Coast than in the drier areas of South Island, was obvious amongst the beeches by its drooping branches. Thirty-two pteridophytes were recorded in the reserve, most notable of which were *Blechnum procerum* and *B. vulcanicum*, *Cyathea dealbata*, which had been notably absent on much of the west coast being a fern of drier areas, *Diplazium australe* found in the wetter areas, *Leptopteris hymenophylloides*, *Pellaea rotundifolia*, *Polystichum richardii*, *Pteris tremula* and *Sticherus cunninghamii*. While most of us were still confused by the filmy ferns, seven were recorded, including *Trichomanes venosum* – there were some in the party who were becoming enviously proficient in their identification!

This was the last we would see of Edith and Pamela so we said our goodbyes and expressed very grateful thanks for all that they had done for us, over the last of the very welcome teas which they provided at the end of each day's fern hunting. They were certainly instrumental in making our 'paths plain' for us, ever ready to identify plants 'with reasons'. They also provided necessary background information about the general vegetation at each site. It would have been a much poorer excursion in South Island without them. Thank you very much for everything, Edith and Pam.

Blenheim to Wellington (Saturday 19 February) **[Paul Ripley]**

Saturday saw us make the short journey from Blenheim to Picton to catch the ferry to North Island. The ferry passes through long and picturesque sounds with only a short open sea crossing. Some of us were lucky enough to see dolphins leaping out of the water near the boat. Somewhat late due to the disorganisation of Budget Rental cars, we left Wellington, the capital of New Zealand but by no means its largest city, to travel the 60km or so up the Hutt valley to the Kaitoke reserve in the Kaitoke waterworks catchment area. Patrick Brownsey, the second migrant from Britain and co-author of our New Zealand fern 'bible', had had a long wait for us, but we were enormously grateful to him for sharing his knowledge of the area and his expertise on the flora.

This was again volcanic country, well wooded with low hills, and popular at weekends with Wellingtonians. We followed the course of a torrent, which feeds one of the city's reservoirs, through quite dense and steep woodland. This was *Blechnum* and tree-fern country. Blechnums (especially *B. novae-zelandiae*) fell from every bank. For some of us this was the first time we had seen *Cyathea cunninghamii*, the gully tree-fern, with certainty. The common name of this very slender tree-fern was easily understood as plants closely followed the course of small streams or flushes. A large number of filmy fern species (11 *Hymenophyllum* and two *Trichomanes*) were noted growing epiphytically on trees and Patrick gave us a very useful tutorial on their diagnostic features. *Blechnum filiforme*, *Grammitis billardierei* and *G. ciliata*, *Asplenium flaccidum*, *Pyrrosia eleagnifolia*, *Tmesipteris tannensis* and *Phymatosorus (scandens* and *diversifolius)* were other quite common epiphytes. Woodland floor plants included *Polystichum silvaticum*, *Lastreopsis (hispida* and *glabella*), *Pteris macilenta* (not otherwise common), *Leptopteris*

hymenophylloides, *Adiantum cunninghamii*, *Asplenium*s (*A. bulbiferum*, *hookerianum*, *oblongifolium* and *polyodon*), *Rumohra adiantiformis* and *Pneumatopteris pennigera*. *Lindsaea trichomanoides* and *Anarthropteris lanceolata* were seen, but, disappointingly, not by me.

Having made our way down to the bottom of the steep track, very happy with the afternoon's ferning, we made our way slowly up to the top again, this time able to take in the changes in the forest with altitude. Again our thanks go to Patrick Brownsey for preparing this visit and for his freely-given advice and expertise that had made this such a fruitful day.

Wellington to Ohakune (Sunday 20 February)

We spent the morning making the long journey north to the town of Ohakune, a ski/walking resort. At first the road followed the coast, but then turned inland and gradually but steadily climbed onto a pastoral landscape of grass and sheep. The soft mudstone was cut by numerous streams making a somewhat chaotic appearance. Eventually the huge bulk of Mt Ruapehu dominated the view. This is an active volcano (the ski area had to be closed in a hurry a few years previously), and wisps of steam could be seen rising from side craters on adjacent hills. We drove up to the Turoa ski centre at *c*.1800m. The views were wonderful, but although this barren moonscape yielded some interesting alpine flowers, the diminutive *Grammitis poeppigiana* (cleverly spotted by Sylvia) and *Lycopodium fastigiatum* were the only pteridophytes found.

Further down, near the Waitonga falls, we parked the cars close to colonies *of Blechnum penna-marina*, *Paesia scaberula* and *Histiopteris incisa*. *Sticherus cunninghamii* and *Gleichenia dicarpa* were abundant in the sparse, mixed woodland of *Nothofagus* and conifer, together with another four *Blechnum* species (*chambersii*, *discolor*, *fluviatile* and *novae-zelandiae*). *Leptopteris superba*, *Grammitis billardierei*, *G. magellanica*, *Hymenophyllum multifidum*, *H. villosum*, *Lycopodium scariosum*, *Blechnum procerum* and *B. banksii* were also recorded.

We soon realised that we should have spent much more time at the picnic site. The vegetation had become progressively more lush as we descended the mountain. *Leptopteris hymenophylloides*, *Leptolepia novae-zelandiae*, *Adiantum cunninghamii* (outside its normal range), *Asplenium bulbiferum*, *A. flaccidum*, *A. polyodon*, *Blechnum vulcanicum*, *Phymatosorus diversifolius* and *P. novae-zelandiae*, *Pneumatopteris pennigera* and *Polystichum vestitum* were among the plants of the woodland floor not seen higher up. Additionally, the epiphytes *Tmesipteris tannensis*, *Trichomanes venosum* and *Hymenophyllum demissum*, *H. dilatatum*, *H. flabellatum* and *H. multifidum* were seen here. The tree-ferns *Cyathea smithii* and *Dicksonia fibrosa* were also recorded and also, possibly, ***Hypolepis ambigua***.

In the evening we were treated to a fascinating account by Viv Nicholls, a friend of Tim Godfrey, of the flora (and fauna) and ecology of the subantarctic islands south of New Zealand, notably Campbell Island and the Auckland Islands. Particularly fascinating for me was the effect of sheep and pigs introduced by the early settlers and the subsequent land reclamation. One of the drawbacks of our hectic schedule was the shortage of time available to examine the days' finds and consolidate records. We had time this evening, however, and a profitable impromptu *Hymenophyllum* workshop enhanced our knowledge of this very well-represented group.

Ohakune to Rotorua (Monday 21 February) **[Patrick Acock]**

With people making their own way on the long drive north, we arrived at Lake Rotopounamu at a range of times. The lake was described by Barbara Parris as the best

short walk in New Zealand and so it proved to be, for ferns at least. Barbara's notes said that over 50 species had been recorded. One record card at least (Alison Paul's) records 49! As we set off up the wooded path to the lake it became obvious that we would see most of the ferns with which we had become familiar by just leaving the trail a few times, but we were quite keen to see the lake and knew we were more likely to see the new ferns on the list close to the lakeside.

Around the lake we kept meeting each other, either by catching up the party in front or by meeting people going the other way around. Towards the end of the circuit I had my first piece of luck in coming across *Botrychium biforme*. It was unlike any *Botrychium* I had seen before and I was very pleased to have discovered it. When I met the anti-clockwise party, they had spotted it just ten yards along their trail! Other highlights were *Lindsaea trichomanoides* and pendant stems of *Tmesipteris tannensis*. I still found great joy in seeing areas of *Sticherus cunninghamii* and *Trichomanes reniforme*. Another delight was *Phymatosorus novae-zelandiae*, trailing out of the wood in straight lines down towards the beach. On returning to the car I found our leader had had to go into town on excursion administration business and had missed all the joys of the morning. She was, however, determined to see and photograph the *Botrychium*!

Car by car, we then made our way to Rotorua, most groups stopping by Lake Taupo for lunch and to see the spectacular view.

Rotorua lies in one of the world's most active volcanic zones. We visited the most famous of the thermal reserves and Maori Centres, Whakarewarewa Thermal Reserve, on the southern edge of the city. There was a paucity of ferns compared to the sites we had visited so far during the excursion, but 13 pteridophytes were recorded. New to our lists were *Gleichenia microphylla*, *Hypolepis ambigua* and *Lycopodium cernuum*. We were especially fascinated by the ferns that were growing epiphytically on the palms and tree-ferns on the roadside near the Maori Village. Some of the group were pleased to have the opportunity to see their first kiwi, albeit in a special kiwi house.

Rotorua to Auckland (Tuesday 22 February)

At the thermal reserve yesterday, we had been fascinated by the different thermal activities, especially those of us who had not seen anything like it before. The famous Pohutu Geyser was particularly spectacular, shooting close to a height of 20 metres. Today we were to see really amazing thermal activity and with it came unusual niches for ferns, which meant that we saw many plants new to the trip and to most of the party.

We made the short (unusual for us) journey to Waimangu Thermal Valley. The scenes were breathtaking in this relatively new thermal valley, created by the Tarawera eruption of 1886, which destroyed the glittering pink and white terraces made famous by colonial artists. First to greet our eyes was a volcanic crater full of boiling water. At the outflow the river kept a temperature of between 47-60°C. It was strange, to say the least, to put one's hand into a river and have to withdraw it because of its heat! In the marshy area away from the stream we discovered *Cyclosorus interruptus*, only to be called back, as we had walked past *Psilotum nudum* in our haste to see the stream, and then again to see a plant that many of us knew only from books, *Schizaea fistulosa*. A whole area of interesting ferns presented itself close by a bridge but I was worried that a warden was keeping his eye on us. Later, however, Alan Ogden informed us that it was he who had been helpful and pointed out all the rarer plants to him when he had told him that we were here specifically to look at ferns. *Doodia australis* was commonplace. A swathe of *Nephrolepis cordifolia* seemed tolerant of the constant cloud of steam from the boiling lake on whose bank it was growing and a shaded bank close to a steaming stream sported a few specimens of *Lastreopsis glabella* and *Deparia petersenii*, whilst a *Christella* species, similar to, but smaller than *C. dentata*

and as yet unnamed, seemed to be 'enjoying' having its feet in the warm mud at the edge of the stream. The track through the reserve was estimated to take three-quarters of an hour to walk, but we had learnt early in the excursion to at least treble these time estimates. A shuttle bus ran through the reserve, and it was not surprising that most members had to take it back to the car park for their lunch, but not before many had lingered that little bit longer to see more fascinating sites down to where the river flowed into the lake. Sylvia was determined to have a boat ride on the lake, and, of course, Paul was determined to have his swim, however short.

At the end of the track, as the terrain opened out into rough scrubland, the ever eagle-eyed Michel Boudrie was the first to observe a new member of the Gleicheniaceae for our records: *Dicranopteris linearis*. It was, of course, on the opposite bank of the stream, but Paul was insistent that we have a closer look at a specimen and paddled through the warm acidic cocktail of arsenic and molybdenum in his wellies. Close examination showed us the difference between this and the *Gleichenia microphylla* we had seen earlier. Michel had also spotted two aliens – *Dryopteris filix-mas* and *Osmunda regalis* – along the track. As we discussed this on the bus on the way back to the entrance, the driver overheard us and commented that they had it in mind to weed them out. We were quite impressed that he should have such a good knowledge of the plants that he knew of these two among so many. The authorities are particularly sensitive to aliens in this region.

We arrived back at the entrance, late, tired, but pleased with our finds. Some members of the party had found time to visit the Reserve shop and came away bearing treasures – tee-shirts and sweatshirts decorated with fern motifs. We now had a long drive to Auckland where many of us had a meal together in the motel.

Auckland to Whangarei (Wednesday 23 February) **[Graham Ackers]**

Auckland convincingly lived up to its 'city of sails' epithet during our excursion by hosting the Americas Cup, an event which dominated all strata of New Zealand life for its duration. Adding to the excitement of course was New Zealand's convincing win shortly after the end of our trip. The city is surrounded by water, with the 'city of sails' referring in particular to the myriad of sailing boats in Waitemata Harbour. The other striking city landmark is the Skytower, which Lesley and I had ascended the previous evening, gaining impressive 360 degree views of the city and its surroundings. It is reputed to be the tallest building in the Southern Hemisphere.

The Skytower is clearly visible from the 'Auckland Domain'. Within this 80 hectare park-like terrain there are gardens, playing fields, glasshouses and the Auckland Museum. It was here that we met Ewen Cameron, who is the Curator of Botany. Ewen's is one of 11 departments holding collections and the first brief stop of our visit was to the herbarium, which is housed using a compactor system. One box is allocated to each species and we viewed specimens of some of the New Zealand native ferns which we had come to know.

Moving on to the Botany Department itself, we saw several members of staff busily databasing the collection. Laid out for our inspection on a large table was a wonderful collection of antique pressed fern books, from many sources and in many styles. The star of the collection was a beautifully bound example with wooden kauri covers inlaid with exquisite marquetry by Anton Seuffert. There were several of the pressed fern volumes produced by Eric Craig, a local carpenter who also ran Craig's Curiosity Shop from which he sold bound and unbound collections of pressed ferns (as well as other memorabilia). I suspect many of us would have welcomed a longer stay in the presence of these wonderful books, but our schedule demanded a move to the Fernz Fernery.

Within the Auckland Domain, the fernery is part of an impressive complex of two glasshouses and gardens. It was constructed (in the open) on the edge of an extinct volcano,

and extends from ground level down to two lower levels, all heavily shaded by a small area of native forest. Three different habitats were created – dry, intermediate, and wet. The plant list (available on entry to the fernery) gave an impressive 156 fern taxa. Inevitably, this was probably out of date – some of the labelling was a little suspect, and some 'weedy' ferns (*Deparia* sp. and *Paesia scaberula*) were having it their own way! Despite this, the fernery did contain some wonderful ferns, including *Marattia salicina* (not seen by us in the wild), all growing in a most evocative and thoughtfully constructed environment.

A few digressions from ferns were possible during our excursion, one of the most enjoyable being a performance by the Maori group Pounamu (Maori for 'jade'). For this we returned to the Museum, and were ceremoniously ushered into the small auditorium. For the next 45 minutes the troupe gave us an emotionally charged performance of Maori heritage, demonstrating various war stances, rituals, songs, and games, including the well known haka dance, ti rakau (stick tossing) and poi (swirling flax net balls).

Following some last looks around the Museum and purchases from the shop, we left Auckland around lunchtime, again heading north and arriving at Whangarei mid to late afternoon. Whangarei is the largest Northland town, and boasts(!) an oil refinery. Whangarei Harbour provided pleasant views from our next site, the Parahaki War Memorial, situated on a hill to the east of the town centre. Although time was restricted, we did manage to record 43 fern species here. This was surprising, as a previous list (admittedly 18 years old) gave only 19 ferns. The hill site consisted of regenerating forest, with various trails leading down the hill through the forest. *Gleichenia microphylla* was present *en masse* in open areas. Although *Sticherus cunninghamii* was also present, we gained our first sighting of the attractive *S. flabellatus* lower down the Ross Track. The site was productive for *Lycopodium*, with four species – *L. cernuum*, *L. deuterodensum*, *L. fastigiatum* and *L. volubile*. The climbing (and rather weedy) *Lygodium articulatum* was noted scrambling over the bush. On a path bank we enjoyed our first sighting of the rare *Loxsoma cunninghamii*, a strange fern bearing a superficial resemblance to *Histiopteris incisa*, but having protruding marginal sori and tubular indusia. Filmy ferns were represented by five species of *Hymenophyllum*, and two *Trichomanes* – our old favourite *T. reniforme*, as well as rather dusty specimens of *T. elongatum*. Particularly large specimens of *Pneumatopteris pennigera* were noted. The stalked *Blechnum fraseri*, a fern which we were to see increasingly in the north, was present. We saw the small *Lindsaea trichomanoides*, but also the rarer *L. linearis*. Another rare find was *Schizaea dichotoma*, seen growing in somewhat dry heavy leaf litter.

As with several of the sites we explored, a longer visit would have proved most rewarding, but the party's need for some relaxation after a long day triggered a move to our motel.

Whangarei to Kerikeri (Thursday 24 February)

We were to end this day in Kerikeri, some 65km (as the crow flies) due north of Whangarei. However, the route entailed a diversion via Dargaville through rolling farmland in an early morning mist. This was to enable us to spend the day exploring the Waipoua Forest on the western side of Northland.

Two hundred years ago, much of the warmer northern part of North Island was forest, dominated by the giant kauri trees. European man's intervention, exploiting the kauri for timber and gum, reduced the extent of these forests to about 4% of their original area. These remnants are all now under the protection of the Department of Conservation. Together with its neighbouring forests of Mataraua and Waima, Waipoua constitutes the largest remaining tract of this type of forest. Like a number of New Zealand endemics, kauris (*Agathis australis*) start life as young trees bearing little resemblance to their adult form, being somewhat spindly, with lanceolate leaves borne on branches extending the

whole way up the trunk. After 50 or more years, the tree then sheds its lower branches, eventually to produce a massive straight trunk, devoid of any side branches, and an enormous crown. Kauri forests contain an abundance of other plants, including the large trees taraire (*Beilschmiedia tarairi*), kohekohe (*Dysoxylum spectabile*), towai (*Paratrophis banksii*) and rata (*Metrosideros robusta*). Beneath the forest canopy, tall dense stands of kauri grass (*Astelia trinervia*) and mapere (*Gahnia setifolia*) are dominant. Also common are Mairehau (*Phebalium nudum*), hangehange (*Geniostoma ligustrifolium*), neinei (*Dracophyllum latifolium*), kiekie (*Freycinetia banksii*) and, of course, ferns.

We met our guide, Barbara Parris, near the Waipoua Visitor Centre. As many will know, Barbara (who is English but grew up in New Zealand) is a pteridologist who spent much of her working life in Britain, but now lives back in New Zealand. She had recommended many of the sites that we visited throughout our excursion.

Our first site was the short Rickers (= young kauri tree) Track, which ascended into forest and petered out along a ridge. The main rationale for visiting this track was to see another rare stand of *Loxsoma cunninghamii*, again noting the bright silvery colour on the lower frond surface and the strange tiny sori. As usual, many other species were seen, most notable being *Tmesipteris elongata*, several small stands of *Blechnum fraseri* and straggling masses of *Lygodium articulatum*.

The second site, involving a modest car journey, was a pilgrimage to view Tane Mahuta, the largest kauri tree still standing in New Zealand. Typically, kauris are 30m high, with a girth of 10m; Tane Mahuta is 51.5m high, with a girth of 13.8m, and is thought to be over 2,000 years old. It was reached by a short boardwalk track, typical of the many excellent trails constructed by the Department of Conservation. Once again, many ferns were seen even along such a short trail, particularly noteworthy being numerous *Dicksonia lanata*.

The third site, a short drive away, was approached from a car park where we had to pay a guard to prevent our cars being robbed! The forest entrance had apparently suffered a fire and this was reflected in the fern flora. *Gleichenia dicarpa* was abundant in this open habitat, but there were also large stands of *Pteridium esculentum* and *Blechnum novae-zelandiae*. This latter fern is very common in New Zealand, and appears to tolerate a wide range of light levels, from open roadside banks (where its fronds hang down) to deep forest floor habitats (where the fronds tend to be erect and very large). One tree in this forest entrance area had a colony of the uncommon *Hymenophyllum armstrongii*, causing a cluster of party members to peer avidly at its diminutive fronds. This fern is uncommonly seen, being usually a high canopy epiphyte, but this stand was growing at head height. It is characterised by undivided or forked fronds, black midribs, black, spiny margins and large terminal sori.

The coach road into the forest led to several tracks, two of which enabled visits to yet more impressive kauris – Matua Ngahere (the second largest living kauri) and the Four Sisters (four tall and graceful trees growing extremely closely together). Another track lead back to the Visitor Centre. A short excursion down this track revealed several specimens of the forest form of *Blechnum novae-zelandiae* as well as some extremely large stands of *B. fraseri*, some individuals having slender trunks 1.5m high. This is a fascinating and unusual fern, quite common in Northland, and (unusually for a pteridophyte) growing in dryish clay. Near the point where the party turned back was a stream, close by which were several plants of another unusual *Blechnum*, *B. nigrum*.

Taken as a whole, the three sites had similar fern floras. A total of 55 species were recorded, including four *Asplenium*, six *Blechnum*, four *Cyathea*, two *Dicksonia*, nine *Hymenophyllum*, two *Lycopodium*, all four *Tmesipteris* species and four *Trichomanes*, the remaining records being for a single species per genus. One 'mystery' fern which is

patchily common in this and other northern forests, is named *Deparia petersenii* in the floras. However, several members of the party felt that it did not resemble closely the Azores form of this species with which we are familiar. In fact the two forms have been ascribed to different subspecies by some botanists. Many of the fern species encountered were epiphytes, and the number growing on dead stumps and fallen logs was particularly impressive in this forest.

The Waipoua forest is a very special place, being an unspoilt, virgin and ancient forest, impressive in its grandeur, greenness and beauty. Together with the rain forests of Westland, these magical forests must rank amongst the finest nature reserves in the world.

Kerikeri (Friday 25 February)

Having travelled to Kerikeri the previous afternoon, our first morning rendezvous with Barbara Parris and Jackie Davidson was a car park by the Kerikeri river, where we all dutifully posed for the group photograph (taken by Jackie with many cameras!). For the morning's excursion we walked the 3km Kerikeri Walkway path which runs alongside the Kerikeri river. This walk is highly scenic, with lovely river views and two impressive waterfalls – the first a short distance into the walk, and the second, the Rainbow Falls, at the end of the walk. The vegetation is secondary forest with a fairly open canopy, the dominant tree being the totara (*Podocarpus totara*). Various habitats were present, including open grassy areas, forest floor, banks, rivulets and tree-trunks. *Adiantum hispidulum* was common on the path side banks, occasionally accompanied by *A. diaphanum*. A few specimens of the tree climbing fern *Arthropteris tenella* were seen, but with relatively small fronds. On the other hand, mature fronds of another tree climbing species *Blechnum filiforme* were present. As usual, blechnums were common, and possibly for the first time we felt we could recognise *B. membranaceum* with confidence (it

photo: R.G. Ackers

Kerikeri, New Zealand.

Jackie & Alastair Wardlaw, Patrick Acock, Sylvia Martinelli, Alison Paul, Agnès & Michel Boudrie.
Christine Mullins (*front*), Paul & Linda Ripley, Tim Godfrey (*back*), Grace Acock, Jacques Homès.
Lesley Marshall-Williams, Esther Balasse, Kenneth Wilson, Graham Ackers Janet Keyes.
Jennifer Ide (*front*), Thomas & Agnes Howshar, Alan Ogden, Barry White, Barbara Parris.
(*Not in photo:* Joan Loraine.)

resembles *B. chambersii*, which was also present). Another interesting find was *Doodia australis*. This is similar to *D. media*, but was given separate species status by Barbara in 1998 on account of slight morphological differences in the stipe and lamina. *Grammitis ciliata* was seen for the first time since 1995 (according to Barbara). Six species of *Hymenophyllum* were recorded, the site being particularly good for epiphytic ferns. Two species each of *Lastreopsis* and *Phymatosorus* were seen. Four species of *Trichomanes* were recorded, one of which, *T. endlicherianum* was new to us, growing on damp rocks in a gully. Alison found a very small *Trichomanes* growing on a *Dicksonia squarrosa* trunk; subsequent investigations by Barbara revealed it to be a new addition to the New Zealand flora!

Two species we encountered, *Nephrolepis cordifolia* and *Selaginella kraussiana*, are widely distributed round the world and are considered in New Zealand to be weeds. The latter was certainly present in vast carpets along the banks. The Northland Regional Council encourages the destruction of such weeds, and publishes a very colourful and informative leaflet entitled 'Environmental Weeds – Delightful but Destructive'. Most of the villains are flowering plants, including *Tradescantia fluminensis*, which was inflicting far more 'environmental pain' along the Kerikeri Walkway than was *Selaginella*. So much so, in fact, that Barbara had come armed with plastic bags into which we disposed of as much *Tradescantia* as was practical during such a walk!

Not all members of the party reached the Rainbow Falls, as some members turned back to provide a car ferrying service from the Falls back to the car park. The Falls are within a small area designated as the Rainbow Falls Scenic Reserve. The most notable ferns seen at this end of the walk were large stands of *Sticherus flabellatus* and one specimen of *Diplazium australe*. The total fern species count for the Kerikeri Walkway was 45.

Following a pleasant lunch in the nearby Butlers café, we drove to the southern end of Kerikeri to visit the Kohukohu Nurseries. This is another nursery specialising in New Zealand natives (although we were welcomed by a bed of impressive and colourful *Hibiscus* cultivars!) Our hosts were owner Tom Lindesay, and fern grower Jackie Davidson. Jackie initiated the propagation of ferns in the nursery, and (apart from Barbara Parris) is the only person in the area growing from spores. Barbara has provided assistance and guidance in the enterprise, particularly in the naming of the ferns. The fern stock is housed in a large shade-house, and consists of an impressive number of well grown species (their current catalogue lists 39). There was also an area set aside within the shade-house for mother plants, and for Jackie's own personal collection which included some non-native ferns, such as *Woodwardia orientalis*. The party were able to exchange experiences on propagation and cultivation with Jackie and Tom, hopefully to the mutual benefit of both factions! Our hosts made us feel most welcome, and it was a matter of considerable regret that we were unable to effect any purchases. Had we been able to do so, with their low cost, high quality and variety, I expect most members of the party would have walked away with armfuls of plants!

Our next stop was Barbara Parris' garden. Barbara lives towards the north end of Kerikeri, on a small valley side. Both the house and location are most impressive, with lovely views over the Kerikeri Inlet and valley. The garden is large, consisting of lawns, sunny and shady beds, a large stand of recently planted trees, and some wild bush. In the beds, Barbara grows a variety of ferns from various parts of the world, and has also an impressive collection growing in pots. The garden is adjacent to the shore, and we walked this short distance via an impressive stand of *Pyrrosia eleagnifolia* growing on a lemon tree, to see mangroves (*Avicennia marina* var. *resinifera*) literally at the bottom of the garden! Over welcome glasses of lemonade (it was a very hot day) Jennifer thanked Barbara for her hospitality and all her help with our excursion.

Our final activity as a group was to have an excellent dinner together at the Kina Kitchen in Kerikeri, and we were pleased to have the opportunity to play host to Barbara and her husband Esmond. Towards the end of the meal, Alastair Wardlaw proposed formal thanks to Jennifer Ide for her monumental and highly effective organisational effort, and presented her with a jade crosier as a memento and present from us all.

Barbara Parris' Garden.
Jackie Wardlaw, Jacques Homès, Michel Boudrie, Esther Balasse, Barry White, Agnès Boudrie, Barbara Parris, Ken Wilson, Janet Keyes.

photo: A.M. Paul

Time to disperse – and impressions (Saturday 26 February)

Rather sadly, after such an enjoyable fortnight, we all dispersed, some members of the party heading home, others staying on in New Zealand.

Everyone will have taken away with them many impressions of the excursion, but here are a few that I found striking:

- Despite the relatively large number of species, most of the party got to grips with the identification of the ferns quite quickly. The one possible exception to this was the filmy ferns.
- Tree-ferns seemed to be everywhere!
- Introduced plants were evident nearly everywhere outside the unspoilt forests, and are clearly a significant problem in the New Zealand flora. If anything, introduced animals were even more of a problem.
- The Westland rain forests must be amongst the most beautiful places on the world.
- Rain almost literally wiped out our second full day's ferning (Arthur's Pass), and persisted somewhat in Westland. In contrast, some days in the north were very hot indeed.
- The amount of travelling, and staying in a different motel every night, became quite tiring. On the other hand, it provided the ideal way of seeing as much of New Zealand as possible in a two-week period, which was of particular value to those of us for whom this was a first visit.
- New Zealand's small population (3.5 million in a country only 10% larger than the UK) results in many parts of the country being very quiet indeed, contrasting markedly (and very pleasantly) with our over-populated European countries.
- The currency exchange rate was very favourable to UK (and other) visitors, and helped to keep an expensive excursion within bounds. (Speaking of currency, ferns feature prominently on New Zealand bank notes and coins!)
- The organisation was excellent and virtually trouble free.

This was the Society's most ambitious excursion so far and, based on its success, others should certainly follow!

CHESHIRE & CLWYD – 9-11 June

Graham Ackers

The centre for this meeting was the picturesque Cheshire village of Farndon. Some of the 11 party members stayed in the comfortable accommodation provided by the Farndon Arms and Greyhound Inn, whilst others made alternative arrangements.

On Saturday morning the drive to the first site took us across the English/Welsh border: the River Dee at the Farndon village boundary. Having skirted Wrexham, the route became highly scenic, taking us past a lovely wet meadow full of large colourful clumps of ragged robin and buttercups. We then ascended to the plateau summit of Eglwyseg Mountain, driving across open heathland, with heather, bilberry and bracken. Further splashes of less welcome colour were afforded by scattered bushes of *Rhododendron ponticum* agg. We parked and met other party members near Worlds End (33/231483). The day started cool and breezy, but sunshine soon provided welcome warmth.

Eglwyseg Mountain is a remarkable limestone feature with a variety of habitats. Our visit focused on the two significant ones, a sheltered leafy valley and an exposed mountainside. We reached the former following a short walk along the road, observing clumps of *Asplenium trichomanes* subsp. *quadrivalens* on a wall en route. When reached, the valley site was seen to be bordered on the north side by a series of limestone cliffs and rock outcrops, and on the south side by a woodland slope. *A. trichomanes* subsp. *quadrivalens* was soon seen again, but this time on natural and not man-made substrates. Clumps of *A. ruta-muraria* were also common on the rocks and cliffs. These two species seemed to dominate the fern flora at the lower end of the valley, but further searching soon yielded a much more respectable number of species! *Dryopteris filix-mas* and *D. dilatata* were scattered in the valley bottom, with small specimens of *D. filix-mas* growing also on the cliffs. By the stream were patches of *Equisetum* x *litorale*. A few clumps of *Asplenium viride* were seen on shady outcrops on the valley's south side, but were only found in this one spot. More common was *Cystopteris fragilis*, occurring in its typical habitats of horizontal damp crevices and overhangs. Apart from the two *Dryopteris* species already noted, other woodland ferns present were *Athyrium filix-femina*, *Dryopteris affinis* agg. (some debate over subspecies!), two specimens of *Polystichum setiferum*, and a few plants of *P. aculeatum*. One or two *Asplenium scolopendrium* plants were noted, and a large colony of *Polypodium* was seen on an out of reach cliff edge. Dead fronds on the ground suggested that this was probably *P. interjectum*. Returning to the lower end of the valley, *Blechnum spicant* was seen on the wooded slopes, in company with many *D. dilatata*. Finally, a small group of *Gymnocarpium robertianum* was spotted on scree (but we were to see many more plants of this species later!).

Our next site was south of Arthur's Crag, about a mile away (33/223467), reached via the Offa's Dyke path. Ferns observed en route were many *Dryopteris dilatata* in woodland, the ubiquitous bracken, one large *Polystichum setiferum*, and a single specimen of *Oreopteris limbosperma* (the only one seen over the weekend). The rather spectacular terrain on the west side of Eglwyseg mountain consists of steeply sloping grassland and scree slopes, leading up to vertical limestone cliffs. Patches of *Gymnocarpium robertianum* were common in the screes, and some plants of *Asplenium trichomanes* subsp. *quadrivalens* were also present. Arthur's Crag itself is a large impressive limestone cliff outcrop, to the south of which a mossy, boggy stream descends to the valley below. As with the rest of the mountain in this region, the terrain near the stream is exposed, the only tree cover consisting of isolated *Sorbus* sp. Large limestone boulders occur in the upper reaches of the stream valley and harboured good fern communities. This is the only part of North Wales where *Dryopteris submontana* is currently known, and numerous plants were found between the boulders. Average frond blade size was around 25cm, larger than the somewhat stunted specimens seen on the scree, but not so large as some gryke dwelling

specimens occurring at Pennine sites. Accompanying ferns amongst the boulders were *Cystopteris fragilis*, *Gymnocarpium robertianum*, *Asplenium trichomanes* subsp. *quadrivalens*, *A. ruta-muraria* and a few small plants of *A. scolopendrium*.

Bonuses of this site (where lunch was taken) were the antics of nesting peregrine falcons, and the sighting below of two circling buzzards. Both species serenaded our lunch with their distinctive calls.

In the afternoon, we returned to the cars via a higher path that initially follows the cliff base, then runs along the cliff tops, finally rounding the top of the Worlds End valley. This walk, the only serious piece of exercise during the day, was most exhilarating, and afforded splendid views of the valley and hills to the west.

We then drove to Llangollen, a picturesque, if touristy, town to the south of Eglwyseg Mountain. Afternoon tea was taken to the accompaniment of the sights and sounds of the Llangollen Railway, a heritage steam railway that started operations in 1981. The tea-rooms were beside the Llangollen arm of the Shropshire Union Canal, and we had a most pleasant stroll along the canal to the east. The main purpose of this activity was to attempt to re-find *Osmunda regalis*, previously recorded along the canal banks. Unfortunately, *Osmunda* was not found, but ferns observed (on the canal sides and in the canal walls) were *Athyrium filix-femina*, *Dryopteris dilatata*, *D. filix-mas*, *Blechnum spicant*, *Polystichum aculeatum*, *Asplenium scolopendrium* and *Equisetum arvense*. Also seen were *Polypodium* sp. and *Dryopteris affinis* agg. but being on the opposite bank of the canal, it was not possible to ascertain the species or subspecies respectively.

On the return car journey to Farndon, some of the party made a small detour to view, and walk across, the impressive Pont Cysyllte aqueduct further along the canal. This completed our industrial archaeology studies for the weekend! That evening, most of the party assembled for dinner at the Farndon Arms, where good company and tasty and unusual food (e.g. ostrich steaks) made for a most enjoyable evening.

On Sunday morning, we drove a few miles east from Farndon to the hamlet of Fullers Moor. The area explored from there was Bickerton Hill, a National Trust property, being the most southerly hill of a Cheshire chain running north to Frodsham. This chain constitutes a ridge of red sandstone, used for local buildings. We climbed along the side of the hill through dense bracken, observing occasional stands of *Dryopteris dilatata* in areas slightly too heavily shaded for the bracken to grow. Single specimens of *D. dilatata* also occurred amongst the bracken, but were less easy to spot. Our route took us up and down the hill a couple of times. At the high vantage-points, we had excellent views ranging from the Welsh hills to Chester and Liverpool.

At one point, near the top of the hill, we encountered an area of sandstone cliffs, outcrops and caves (33/503536) which proved to be the most productive for ferns. Forest ferns here were *Athyrium filix-femina*, *Dryopteris filix-mas*, *D. affinis* subsp. *borreri*, and *Blechnum spicant*. Three rock ferns were seen on the sandstone: *Polypodium vulgare* occurred as a large expanse colonising an inclined mossy sandstone outcrop adjacent to a large cave, a single plant of *Asplenium adiantum-nigrum* was seen on the cliff just above head height, but most interesting were the several plants of *Asplenium trichomanes* subsp. *pachyrachis*, some partly hidden by other vegetation. All displayed the typical habit – fronds appressed to the substrate, and pronounced pinna lobing. The variability in this lobing was discussed, being illustrated by drawings in the soil by one member of the party! Sandstone is often assumed to be acidic, thus the presence of this calcicolous plant seemed surprising. However, sandstone can have a calcareous matrix; alternatively, there can be mineral-rich veins in an otherwise acidic rock.

More excellent views, over the Cheshire plain, were enjoyed from our Sunday lunch venue, the Pheasant Inn at Higher Budwardsley. The weather, overcast and mild, was just warm enough for us to sit outside!

After lunch, en route to Chester, we stopped to observe some fine specimens of *Asplenium adiantum-nigrum* on a roadside wall near Tattenhall (33/497567). Then came the touristy bit! On arrival in Chester, we hired one rowing boat and one motor boat to sail up the River Dee. The motor boat hardly deserved the name, being grossly under-powered, and barely making headway against the current. The rowing boat, on the other hand, powered by a succession of three swarthy oarsmen, made excellent progress, despite narrowly avoiding contact with some slightly larger river cruise boats! Our destination was a rather derelict landing stage, where the river wall was adorned with curtains of *Adiantum capillus-veneris* (33/418663). This was very strange and unusual and we could only speculate on their mode of arrival. The plants seemed to be flourishing and gave the appearance of having been there for some considerable time.

photo: A.M. Paul

River Dee, Chester. The motor boat from the rowing boat!
Howard Matthews, Linda & Mick Craddock, Steve & Karen Munyard.

Having returned the boats safely (surprisingly!), we took tea, then went our separate ways. All agreed that the weekend had been highly enjoyable, with good ferns, good company, excellent scenery and kind weather. For this, no small thanks are due to Paul Ripley, whose local knowledge and diligent research guaranteed a splendid field meeting.

ALNMOUTH, NORTHUMBERLAND – 28-30 July

Pat Acock

Thirteen of us gathered from all corners of Great Britain, and the USA, for dinner at The Saddle Hotel, Alnmouth with our leader, Rob Cooke, and to discuss plans for the weekend's fieldwork. We were pleased to meet three newer members who had been enticed out as well as Casey Vickers, a medical student from the USA who had been working on *Dryopteris* at The Natural History Museum

Saturday morning found us exploring the wooded area above the River Coquet to the west of Felton (46/185003), about eight miles south of Alnwick. Along the lane and in the woods themselves we observed many of the more common woodland ferns: *Asplenium scolopendrium*, *Dryopteris filix-mas*, *D. dilatata*, *D. affinis* subspp. *affinis* and *borreri* and *Athyrium filix-femina*. On the wall of the picturesque church were some fine plants of *Asplenium adiantum-nigrum*. In a wet flush in the woodlands we saw both *Equisetum sylvaticum* and *E. telmateia*. *E. arvense* and *Pteridium aquilinum* were also recorded, but searches for *Equisetum hyemale* (by the river) and *Botrychium lunaria* (on the hill above the woods) proved fruitless.

After lunch in Warkworth we set about exploring the nearby dunes to try to chase up a report of an *Equisetum* here and ascertain which species it was. On our way from the car park (46/256064) we saw *Equisetum arvense* and *E. telmateia*. The *E. arvense* plants were by far the largest plants of that species ever seen by most of the party. The dunes to the south-east had plenty of *Polypodium vulgare* but only small numbers of *Dryopteris filix-mas* and *D. dilatata*. We could not find any sign of the horsetail we were after, so we went on to Craster. A long stone wall was heavily colonised by *Asplenium ruta-muraria* and some *A. trichomanes* subsp. *quadrivalens*. We walked south along the coast for about half a mile to Cullernose Point (46/259187) to a cliff where every niche was nested by kittiwakes. Here we found what we had come to see – abundant large plants of *Asplenium marinum*, which does not occur in many sites this far south on the east coast. As we left Craster for our dinner, Adrian Dyer lingered for a cup of tea and on the dry-stone wall of the car park discovered *A. ceterach*, a plant that is not very common in north-east Britain.

A change of plan on Sunday saw us travelling to Bellingham to seek out *Asplenium trichomanes* subsp. *pachyrachis* (*A. csikii*), recently discovered by Jennifer Ide. Hareshaw Burn (35/8485) turned out to be one of those rare fascinating ferny habitats where turn by turn the list of species grows in size and delightfulness. We started by observing *Asplenium trichomanes* subsp. *quadrivalens* on buildings and walls as we approached the burn. Then we saw *Dryopteris filix-mas*, *D. dilatata* and *D. affinis* subsp. *borreri*, *Athyrium filix-femina*, bracken and *Equisetum arvense* were added and then very large plants of *E. sylvaticum*. *Polypodium vulgare* was spotted on the oaks and then *Asplenium scolopendrium*, *Blechnum spicant* and *Polystichum aculeatum*. I had only ever seen these growing so close together in Selborne before. Speculation that we might see *Phegopteris connectilis* soon proved correct. At the next bend, although most of us had walked past them, sharp-eyed Alison spotted *Gymnocarpium dryopteris* and *Oreopteris limbosperma* and was able to point them out on the way back.

At the head of the gorge near a steep waterfall, Hareshaw Linn (35/841853), on iron-rich sandstone cliffs we found *Cystopteris fragilis* and many plants of *Asplenium trichomanes* subsp. *pachyrachis*. Unfortunately, many of us had to beat a hasty retreat to pick up trains from Alnwick Station, though we still had time on returning to the cars to drop the odd pteridologist into the stream to collect a few spleenwort fronds in the cause of science and to be treated to tea and cakes by Mary Gibby.

We are grateful to Rob for organising a great weekend.

FOREST OF DEAN, GLOUCESTERSHIRE – 19-20 August Nick Hards

On Saturday 19th August, 18 members and friends gathered in the car park at the Wyndham Arms, Clearwell, where the first task was to collect the orders for lunch. We were also given an early taste of what turned out to be a meeting of surprises when Jonathan Crowe announced that he had found '*pachyrachis*' (we subsequently decided that we should probably be using the name *Asplenium csikii*) in Clearwell the previous evening. This particularly pleased Mark and Clare Kitchen, who are the Vice-County Recorders and previously only knew of one site in the county.

Our first site was the old railway line and quarries between Upper Soudley and Ruspidge. I had collected many Carboniferous fossil plants in this area, but that was over 30 years ago. What I did know was that there were plenty of modern ferns to be seen. Of these, the *Cystopteris fragilis*, which is uncommon in this area, was perhaps the best find, and the *Polypodium* the most puzzling. At the time it seemed likely that this was *P. cambricum* because of the shape of the teeth on the fronds, and because they were such young fronds. Mark was going to return and check when the spores are ripe. However, after the meeting ended I noticed other plants of undoubted *P. interjectum*, some of the fronds of which were similarly toothed and all of which were equally immature. I also checked my own plants when I returned home, and found that the *P. cambricum*, even in late August, was still only just unfurling, while both my *P. vulgare* and *P. interjectum* were producing a lot of toothed and lobed fronds this year. My view is that this will turn out to be *P. interjectum*.

The fossil hunt in the large quarry just south of Ruspidge was, frankly, disappointing. We only found a few fragments of some clubmosses. The spoil heaps by the road were better, although I annoyed a lot of ants when I turned over an impressive lump of *Sigillaria* (the bark of a particularly large clubmoss). We largely followed the road back to Upper Soudley, detouring into a couple of small freemines where the spoil heaps were very overgrown, and stopping to admire an old bell pit which would have been a primitive iron-ore mine. The Forest of Dean is littered with small mines because of an ancient practice whereby a man born locally and who has worked in a mine for a year and a day can apply to the Gaveller at Coleford to start his own mine.

After an excellent lunch in the White Horse, Upper Soudley (which appears to be the old railway station), we set off for Cannop ponds. We stopped briefly at Blackpool Bridge (32/653089), partly to admire the many ferns on the railway bridge nearby, and partly to see the *Dryopteris carthusiana* which grows abundantly by the stream.

We parked opposite the ponds (32/609109) and then had a debate over the whereabouts of the *Equisetum sylvaticum* colony. As it became obvious that there is more than one site, we decided to walk a short distance by the road before heading up the hill. Not only did we stumble on a brilliant site with three horsetails including *E. sylvaticum*, we also found large and abundant plants of *Oreopteris limbosperma*, which was supposed to be one of the attractions of climbing the hill! The route up to the old quarry is complicated, and on the way I spotted a plant of *Asplenium adiantum-nigrum* growing, somewhat untypically, on the ground near another recently disused freemine.

At the top I was somewhat concerned to discover that the large quarry is no longer disused and the paths have moved. However, we found the old tramway and made our way down Bix Slade, with some rather brief forays into the undergrowth. Not surprisingly these did not yield any trace of the *Gymnocarpium dryopteris* for which there are some old and rather vague records (it is still known further north, in Wimberry Slade). However, the very luxuriant common ferns were much admired, the record being a frond of *Dryopteris affinis* subsp. *affinis* over six feet long!

After a very strenuous day some of the party were dead on their feet but several of us visited Jonathan's new site for *Asplenium trichomanes* subsp. *pachyrachis* (*A. csikii*) (32/578081). It was both abundant and (for such a small fern) luxuriant, and very conveniently chose to grow next to some *A. trichomanes* subsp. *quadrivalens* just to illustrate the differences. Curiously, at all the sites I know, the rock on which it grows has a significant iron content.

The next day we met up at Symonds Yat (32/564157) (the small car park, not the touristy one), my original intention being to march the party all the way to Biblins Rocks to see the *A. trichomanes* subsp. *pachyrachis*. However, I was assured that we could find it on the Gloucestershire side of the river. Much of the rock here is neutral to slightly alkaline, and the *A. scolopendrium* is particularly large and impressive on the alkaline bits (the *Pteridium aquilinum* is larger, but less impressive, on the neutral to acid bits!). Mark Kitchen was the first to spot some *Asplenium adiantum-nigrum* on the way down. I was surprised to find some *Gymnocarpium robertianum*, which confirmed the rediscovery of an old record a few years earlier.

We searched the heavily wooded cliffs near the suspension bridge (32/553143) and eventually found that the *A. trichomanes* subsp. *pachyrachis* extends over a considerable distance although it is never common. The walk back up the hill seemed twice as far and half the party discovered a short cut back to the cars, while the others waited for them to catch up. Eventually we were reunited and headed to Staunton for a very welcome lunch.

photo: N.J. Hards

Forest of Dean.

Clare Kitchen, Ivor Price, Derek Dixon, Peter Hindle, Eleanor Hards, Marti Martin, Howard & Tina Matthews, Pat Acock, Mark Kitchen, Keith Holly, Jonathan Crowe, Doreen Holly, Andy Martin, Christine Mullins.

The afternoon visit was to Cadora Wood in the Wye Valley. This was ancient woodland until about 30 years ago, when much of it was felled and replanted with conifers. It was acquired in 1999 by the Woodland Trust, who are intending to try and restore it. I had arranged to check out what remained of the original rich fern flora. Unfortunately it is a long hard walk up Coxbury Lane from Redbrook (32/537095), so some of the party opted to relax by the river and others only got as far as Causeway Grove, which is intact ancient woodland. Curiously, those of us who reached Cadora Wood (entrance at 32/537086) found more different ferns, as there was a good patch of *Dryopteris carthusiana* by the path. Under the worst of the coniferous plantings there were no ferns, but there is plenty of evidence of what it all used to be like and some of the plants had enormous woody stocks and must be a considerable age. There were also masses of young sporelings of several different species, which bodes well for the future. We left Mark and Clare Kitchen still searching the wood, while most of the rest of us sampled the tea and cakes at the tea-room after bidding farewell to Marti and Andy Martin, who had a long drive home after their first BPS field trip.

Pteridophytes recorded during Forest of Dean Meeting

	Ruspidge/ Upper Soudley	Blackpool Bridge	Cannop Ponds	Clearwell	Symonds Yat	Cadora Woods
Equisetum arvense			x			
E. fluviatile			x			
E. sylvaticum			x			
Polypodium interjectum	x	x			x	x
Pteridium aquilinum	x		x	x	x	x
Oreopteris limbosperma			x			
Asplenium adiantum-nigrum			x		x	
A. ceterach	x		x	x		
A. ruta-muraria	x		x	x	x	
A. scolopendrium	x	x	x	x	x	x
A. trichomanes subsp. pachyrachis				x	x	
A. trichomanes subsp. quadrivalens	x	x	x	x	x	
Athyrium filix-femina	x	x	x		x	x
Gymnocarpium robertianum					x	
Cystopteris fragilis	x					
Polystichum aculeatum	x		x		x	
P. setiferum	x				x	x
Dryopteris affinis agg.						x
D. affinis subsp. affinis	x		x		x	x
D. affinis subsp. borreri	x		x		x	
D. carthusiana		x	x			x
D. dilatata	x	x	x		x	x
D. filix-mas	x	x	x	x	x	x
Blechnum spicant	x	x	x		x	x

LECTURE MEETINGS AND DAY VISITS 2000

MINI-SYMPOSIUM ON XEROPHYTIC FERNS, NHM, LONDON – 15 January

Martin Rickard

Once again our hard working Meetings Subcommittee had come up with a successful day's programme. I am sure that the two dozen members who attended all found this a very enjoyable and informative meeting.

First to speak was Sylvia Martinelli, who set about defining her concept of just what constitutes a xerophytic fern with a speedy tour of the drier parts of the world. I think the conclusion was to include any species which has the ability to restrict water loss and/or be able to store water. Of course, as with all things, it is a matter of degree. Sylvia illustrated her talk with her own photographs which included many species which I for one have never seen in the wild. Good examples were from Hawaii (*Nephrolepis* sp., *Pityrogramma calomelanos*), California (*Pellaea brachyptera*, *Cheilanthes siliquosa* and *Pentogramma triangularis* amongst others), New Mexico (*Notholaena fendleri*), South Africa (*Cheilanthes hirta*), Chile (*Adiantum chilensis*, *A. gertrudis*, *A. sulphureum*, *Polystichum andinum*, *Sticherus* sp.). I think the general consensus was that *Polystichum andinum* was the most desirable! Many of us were somewhat jealous of all the travelling Sylvia has done; she certainly whetted my appetite to see for myself some of these wonderful ferns, particularly in South America. A BPS trip there would be wonderful and I think, with luck, we may be able to get something organised in a few years time once the dust from the New Zealand trip has settled. Chile might be more expensive but maybe …!

Before lunch Alison Paul described the principal xerophytic ferns from Europe. All are in the Adiantaceae, a point that had escaped my notice. I had earlier been surprised when Sylvia had described the three adiantums from Chile as xerophytes but here was Alison reinforcing the link! In Europe we have *Notholaena marantae*, *Cosentinia vellea* and seven species of *Cheilanthes*. With the aid of photographs and other illustrations, Alison carefully explained their characteristics, reinforced with a splendid range of specimens from the Natural History Museum herbarium. In short the principal 'useful' characters are as follows:

Notholaena has a densely scaly undersurface, the scales protecting the sporangia. *Cosentinia* has a very woolly indumentum protecting the sporangia. *Cheilanthes* has marginal sori protected by a pseudoindusium, in effect the underturned and modified margin of the leaf. Whilst there are differences in gross morphology, the species are best determined by examining the pseudoindusium and indument with a hand lens. In *C. pulchella* the pseudoindusium is very broad and continuous round the linear segments (i.e. undivided). In *C. acrostica* it is irregularly lobed with a fimbriate margin. In *C. tinaei* it is fringed and there are short red glandular hairs on the underside of the frond, whereas *C. hispanica* has abundant long red multicellular hairs and an entire pseudoindusium. In *C. maderense* it is narrow with rounded entire lobes. In *C. guanchica* it is broader, intermediate between *C. maderensis* and *C. pulchella*. In *C. persica* it is fringed with very long tangled hairs. Several of these species are allotetraploids derived from hybrids between the diploid species, hence the similarity between species can be rather confusing. If this is not enough, Alison also pointed out that many of the species hybridise with one another...! A practical identification session followed for those who wished to look at examples of these species with the aid of a microscope and various keys that Alison had provided. There was also an opportunity to view and admire a wide range of potted cheilanthoid ferns grown and displayed by Clive Brotherton.

Our first speaker after lunch was Bob Chinnock, an international pteridological celebrity, who is also currently the ABLO (Australian Botanical Liaison Officer) based at Kew. I say celebrity because anyone who has co-written a book on New Zealand ferns is a star in my book! The book in question being *Ferns and Fern Allies of New Zealand* by Heath and Chinnock published in 1974. As the title ABLO suggests, Bob is now permanently based in Australia where he has recently made a very significant contribution to the *Flora of Australia*, Volume 48, Ferns, Gymnosperms and Allied Groups (1998). Plates drawn for this major work were used to illustrate his talk. Bob followed on the theme started by Sylvia in the morning by running through the xerophytic ferns of Australia – except that he virtually ignored *Cheilanthes*! Using a definition of xerophyte similar to Sylvia's, Bob described the following genera as being at least partly xerophytic in Australia: *Isoetes* – one species grows on top of Ayers Rock!, *Pleurosorus*, *Cheilanthes*, *Paraceterach*, *Marsilea*, *Ophioglossum*, *Adiantum*, *Pteris*, *Psilotum*, *Nephrolepis*, *Doodia*, *Lindsaea*, *Dicranopteris*, *Lycopodium*, *Schizaea*, *Actiniopteris*, *Phylloglossum*, *Lygodium*, *Platyzoma*, *Asplenium*, *Microsorum*, *Drynaria* and even *Hymenophyllum*! A thought-provoking list with many genera so different in character from the average pteridologist's idea of a xerophytic fern.

The day was wound up by an informal session where Clive Brotherton answered questions on the cultivation of xerophytic ferns. Clive, and his wife Doreen, are stalwarts of the Midlands Regional Group but they rarely have time to participate in the more distant national meetings (including those in London). Within the West Midlands, however, Clive's skill in cultivating these ferns is almost legendary. He grows a very wide range of xerophytic ferns, mostly in his greenhouse but five or six species do well in his garden which is almost entirely laid down to gravel! I attempted to chair this session but such was the interest from the floor that I was largely superfluous. The questions kept coming thick and fast and Clive's answers were always carefully considered. Topics covered included compost, watering, temperature, pests, compost sterilisation, spore cleaning and propagation from spores, as well as cultivation out of doors, in an alpine house and in a greenhouse. The liveliness of this session was adequate proof of the suitability of this format when we are fortunate enough to have a true expert in the hot seat. We all went away with a much better idea of what we were doing wrong!

In conclusion, I would like to record my thanks to all the participants and particularly to Graham Ackers, who conceived the idea for the meeting and coerced all the contributors into taking part. He was ably supported by the staff at the Museum, in this instance Alison Paul and Mary Gibby. Our sincere thanks to all three of you.

SPRING INDOOR MEETING, CHELSEA PHYSIC GARDEN, LONDON – 25 March

Graham Ackers

This was not entirely an 'indoor' meeting, because the Chelsea Physic Garden venue provided the opportunity for bouts of fresh air between proceedings. Indeed, the garden was looking particularly fine with its spring blooms and blossoms. Dodging the showers, the sunny spells allowed us to see the colourful winter Woodland Garden, the Garden's bees visiting marsh marigold (*Caltha palustris*) flowers in the pond, masses of white bergenias, the impressively statuesque self-seeding *Echium pininana* from the Canary Islands, the foxglove tree (*Paulownia tomentosa*) in flower, and the Judas tree (*Cercis siliquastrum*) about to flower. The New Zealand theme of this meeting was 'supported' by seeing the collection of New Zealand medicinal plants, including *Phormium* sp. and a fuchsia tree (*Fuchsia excorticata*).

The meeting started with a series of illustrated talks presented by some of those who attended the Society's New Zealand excursion in February. Alastair Wardlaw's introduction set the scene by showing the route taken by the party. Alastair went on to describe the

context of the excursion in terms of the size and population of New Zealand, its geology, geographical location, and extent of its fern flora. The first full three days (Saturday to Monday) of the excursion itself were then described, from the searing heat and hot rocks ferns of Christchurch's Port Hills area, to the drenching rain in Arthur's Pass, and ending in the wonderful rainforest habitats of the Hokitika area in the west of South Island.

Sylvia Martinelli, assisted by Alan Ogden, then went on to present an account of the next four days. Tuesday saw the party at Fox Glacier, doing some 'touristy' things, but significantly exploring the amazingly ferny rainforest along the Minnehaha track. On Wednesday the party returned north, passing back through Hokitika, exploring some coastal fern locations en route, and terminating at Westport. Thursday's destination was Nelson, where a couple of fascinating fern gardens were visited, together with a native fern nursery. That evening, excursion members were the guests of the Nelson Fern Society. Friday saw the party travelling to Blenheim, en route visiting a ferny nature reserve at Pelorus Bridge.

Paul Ripley and Patrick Acock together covered the next 'leg'. On the Saturday the party crossed Cook Strait to North Island, and on arrival were accompanied by Patrick Brownsey to explore a woody waterworks reserve 40km north of Wellington. The party stayed in Wellington that night, then moved on to Okahune in the Tongariro National Park, where mountain flora was observed along various tracks and alpine meadows. On Monday the route taken was from Ohakune to Rotorua, famous for its hot springs and thermal lakes. On Tuesday morning, the Waimangu thermal region was visited, before the party moved off to Auckland.

The final 'leg' was described by Graham Ackers. On Wednesday morning, the Auckland domain was visited to see the Auckland Museum's collection of antique New Zealand fern books, the fernery and a performance of Maori culture and song. Around lunchtime the party set off for Whangarei, where the wooded hill site of Mount Parahaki was explored. All of the ferny activity on Thursday was spent in the company of Barbara Parris at the wonderful Waipoua Forest, with its untouched kauri trees and associated vegetation. By Friday, the party had arrived at the final destination of Kerikeri, where the Kerikeri Walkway was explored for ferns. In the afternoon, a local native plant and fern nursery and Barbara Parris' house were visited. Excursion members dispersed on the Saturday.

The overall impression gleaned from these presentations was of a highly successful and enjoyable trip, organised superbly by Jennifer Ide. A much fuller account of this excursion appears elsewhere in this *Bulletin*.

Next on the agenda was a short presentation from Mary Gibby on the history of the Chelsea Physic Garden. Naturally, the history of any institution is an amalgamation of the personalities who have helped to create it. The Garden was conceived by the Society of Apothecaries in 1673. After some difficult early years, the potential value of the gardens was emphasised by a visit from the then well known Professor of Botany at Leiden University, Paul Hermann. However, the most influential personality was Sir Hans Sloane, who bought the Manor of Chelsea in 1712, and ten years later leased the grounds to the Apothecaries in perpetuity, providing it was always used as a Physic (or now a Botanic) garden. Sloane was also instrumental in securing the appointment of Philip Miller as Curator, who went on to transform the fortunes of the gardens during his 48 year tenure. During that time, Linnaeus visited the gardens. In 1772, Sir Joseph Banks brought back some slabs of black lava from Iceland, and presented them to the gardens to construct what is thought to be the earliest rock garden in the country. This is now a listed structure, currently undergoing renovation. Others associated with the gardens were William Curtis (publisher of the famous *Botanical Magazine*), Nathaniel Ward (of Wardian case fame), and Thomas Moore (author of several Victorian fern books).

In present times, the main use of the garden remains botanical, and this is supported by the order beds and many other fine features. Currently there is significant fern interest, and the four main fern collections were visited. Within the unheated fern house is the collection of Macaronesian ferns. Also within the fern house is a famous Wardian case, containing the seemingly rampant *Trichomanes speciosum* and a couple of specimens of *Leptopteris superba* – the Prince of Wales Feathers fern (seen during the New Zealand excursion in its native rainforest habitat). Just outside the fern house is Mary Gibby's *Dryopteris* collection, with some impressive (and rare) species and hybrids from Macaronesia, Europe and elsewhere. Naturally, this collection will become more attractive as the new season's fronds unfurl. Johannes Vogel has a large *Asplenium* collection to support his research activities. This is located next to the main buildings, as is the recently acquired collection of *Doryopteris*. Not being hardy, these ferns are housed in the Natural History Museum's glasshouse. The collection is being built up by Jovita Cislinski-Yesilyurt, a research student from Brazil, who is preparing a thesis on the genus. They are a particularly attractive group of plants, which horticulturally should be treated as 'semi-xerophytic'. There remain a number of scientific puzzles to unravel, principally the delineation of the genus, its species, and their problematical hybrids. One point of particular interest was that the morphology of sporelings may, in some cases, prove more helpful for species separation than the fully grown sporophytes. Thanks are due to Jovita and the other collection owners for interpreting their collections for us.

This garden session merged with the lunch hour, after which the Society held its Annual General Meeting. Minutes of the AGM appear elsewhere in this issue, however, I would make the personal observation that recent AGMs have been both enjoyable and informative, with the various reports being presented briefly and professionally. In no way are they the ordeal that some might imagine and I would encourage as many members as possible to attend in future years!

After the AGM, Graham Ackers ran a short forum for new members to help explain the workings of the Society and how to get the most out of it.

Throughout the meeting, book sales were (as usual) ably run by Steve and Karen Munyard and similarly, merchandise sales by Mick and Linda Craddock. Gerry Downey kindly volunteered to run the plant sales (which netted a welcome £43). To support the theme of the meeting, Martin Rickard brought along some of his own antique New Zealand books, including superb examples of pressed fern books with their wooden bindings by Anton Seuffert and Eric Craig. We also had a preview of Martin's new book, *The Plantfinder's Guide to Hardy Ferns*, due for publication the following month.

The meeting closed an hour or so after the AGM, members having indulged in tea and cakes and (hopefully!) enjoyable social discourse.

ROYAL BOTANIC GARDENS, KEW, RICHMOND, SURREY – 20 May

Pat Acock

Twenty-five members were greeted by Julie, a member of the Kew staff, and given a badge to wear which entitled those who remembered to a cup of coffee or tea.

We set off for the outside fern borders at the end of the Order Beds. Here we were able to acquaint some of the newer members with a few of the more common British ferns and varieties as well as some of the more commonly planted foreign hardy plants. Ferns of note included *Osmunda regalis*, *Onoclea sensibilis*, *Polypodium* x *shivasiae*, *Polystichum aculeatum* and *Phegopteris connectilis*. *Ophioglossum vulgatum* was spotted in a tight clump in one of the beds, a good chance to show this species to those not so familiar with it. We moved on through the Rockery where we observed a few remnants of the fern flora

of an earlier age, a few tasselled lady ferns and hart's tongues as well as a small colony of *Cystopteris fragilis*. At the Alpine House we saw a few hardy ferns inside before moving around the sides and back where a few favourites lie. These included *Polypodium scouleri*, *Adiantum pedatum*, *Cystopteris dickieana* and *Asplenium ruta-muraria*.

Before we broke for lunch we went into the Princess of Wales Conservatory and looked at the *Adiantum* species and cultivars downstairs. On going into the more tropical sections we admired the various ferns and tried to come to grips with the families we had met in our different experiences. The section with the rock wall is still predominantly empty and we look forward to the time when it is restored to its former glory.

Over lunch we got to know some of the newer members and then we reassembled at the Filmy Fern House. With some of the party recently back from New Zealand, the house took on a new dimension and we were able to look out for some of the plants we had admired on our travels. Care will need to be exercised in the management of this house as many of its bygone treasures have already gone and others look as though they will be soon inundated by more weedy growth.

Outside, at the back of the Filmy Fern House, we looked at the rearranged ferns donated at the time of the Society's centenary. The plants that are left are growing reasonably well. Some members took the opportunity to leave at this point but a few hardy ones went in search of a few more ferns in the Palm House. We then called in at the bookshop before going our separate ways.

RHS GARDENS, WISLEY, SURREY – 3 June **Pat Acock**

On a fine spring day fifteen members met Mike Grant, one of the Wisley botanists who has a special interest in ferns. After an initial talk by Mike we set off for the ferny areas below the rockery, stopping off on the way to admire a few *Polystichum* cultivars, *P. andersonii* and *Pseudophegopteris levingei*.

In the lightly wooded lower area the ferns were well laid out and we were able to show our newer members some of the British native plants and contrast these with foreign ferns and British varieties. Growing in the water we were able to see a number of majestic *Osmunda regalis* varieties as well as *O. cinnamomea*.

Ascending the Rockery we were shown another area set out mainly with native ferns but also with a few hardy foreign favourites. Higher up the Rockery one group discovered a few remnants of *Pseudophegopteris levingei* which may still have its revenge and recolonise its former haunt. A little further along we discovered *Asplenium trichomanes* and *A. ceterach* growing in a rock wall. In the wall supporting the Alpine House bank we observed a few more ferns including *Cyrtomium fortunei*. In the Alpine House there were only four ferns including the delicate little *Pteris gallinipes*, *Cheilanthes maderensis* and *Dryopteris affinis* 'Crispa Gracilis'; the rest of the alpines and the splendid way they were displayed made up for that.

Outside the large greenhouses we met for the afternoon session and Mike led us inside to see the huge platyceriums. One plants of *Platycerium bifurcatum* is in excess of 100 years old, having come from the garden's previous home at Chiswick. Discussion followed on the status of a splendid *Davallia* and Mick Craddock was given a piece to take home to identify. In the tropical area we admired a few large ferns as well as a jade plant in glorious bloom. Moving into the Singapore Airlines Orchid Display area we of course admired the adiantums and we were shown a fine specimen of *Adiantum trapeziforme* given to the Prince of Wales. Mike informed us that the donor had visited the house only recently and had been surprised to see it still in its original pot, a hollowed out tree-fern trunk.

Outside the Stanley Smith Orchid House is a fern border where there was much discussion on a few varieties as to whether they were monstrosities or good cultivars and some disagreement about the identity of one or two of the hardy species in this border. Moving on to Battlestone Hill we had to admire the *Dicksonia antarctica*; the older, more established plants had many luxuriant fronds.

We were pleased to meet two of our newer members, Andy and Marti Martin, and trust that they enjoyed the day and will attend some of our other meetings. Thanks are due to Mike Grant who once again gave up a summer Saturday and was not only generous with his time and patience but nearly disappeared into the pond trying to reach a good piece of *Davallia* for Mick to identify.

MIDLANDS FERN SHOW, UNIVERSITY OF WARWICK, COVENTRY – 15 July

A.R. Busby

Sixteen members attended the Midlands Fern Show held at the University of Warwick's Science Education Department at Westwood. It was very gratifying to see Steve and Karen Munyard there with a selection of books from the BPS Booksales. Another feature of the meeting was a large selection of ground grown ferns for sale kindly donated by Mrs Sue Pierce-Seary.

During the morning, members visited my garden in Kirby Corner Road and much discussion took place concerning my biggest garden problem, namely the control of bindweed, or rather my lack of control of this pernicious weed. In the afternoon Dr Alan Ogden gave us an illustrated talk on his recent visit to Ecuador. His slides featured many, largely unnamed, cloud forest ferns.

The main event of the day of course was the competitive fern classes. Regrettably, Mrs Rita Coughlin was unable to attend to judge the ferns so this heavy burden fell upon me.

Class 1 – One Pot Fern (any kind or variety)
1st L. Kirkham, 2nd R.J. Smith, 3rd J. Whysall (11 entries)
Class 2 – Three Pot Ferns (any kind or variety)
1st L. Kirkham, 2nd R.J. Smith, 3rd J. Whysall (5 entries)
Class 3 – One Pot *Equisetum* (any kind or variety)
1st P.J. Acock, 2nd P.J. Acock, 3rd P.J. Acock (5 entries)
Class 4 – One Pot Aquatic Fern (*Azolla*, *Salvinia* or *Marsilea* only) (no entries)

The general condition of the exhibits was excellent although a number of plants displayed obvious damage by scorching and some exhibits, though quite adequately cultivated, were poorly presented. There was a tie between Lawrence Kirkham and Patrick Acock for the most points awarded, so the J.W. Dyce Trophy will be shared by them this year.

I feel that it is time to review how the classes are formulated, therefore I plan to revise the classes for next year to distinguish between indoor and hardy ferns.

Although sixteen is a slight improvement on attendance from last year, it is still very disappointing. Perhaps some members are under the illusion that to attend the meeting you are obliged to exhibit ferns. Nothing could be farther from the truth. We welcome all members at this meeting. My thanks to all those members who did kindly support this meeting, especially those who travelled long distances.

PHOTOGRAPHIC WORKSHOP – 16-17 September

This meeting unfortunately had to be cancelled owing to lack of interest.

REGIONAL MEETINGS 2000

LEEDS & DISTRICT

Barry Wright

Brockadale, Nr Wentbridge, N. Yorkshire – 24 June (Leaders: Ron & Pat Cole)

Our first outing of the year was to the Yorkshire Wildlife Trust nature reserve at Brockadale. The reserve comprises woodland and pasture set in a deep valley of the River Went on Magnesian Limestone. We met in the new car park at 44/508175. From there we set off down into the valley and the wooded area where we came across *Dryopteris filix-mas*, with some of the great many *Asplenium scolopendrium* plants and the more elusive *Polypodium vulgare*. There were relatively few *Dryopteris dilatata*. Ron then led us to an area where he assured us we would find *Ophioglossum vulgatum* and possibly *Botrychium lunaria*. After much effort we found the former at 44/50691702. Also in this area were a few *Dryopteris affinis* subsp. *borreri*.

The route to the pub took us past many more luxuriant stands of scollies. We chalked up some *Equisetum arvense* under the A1 bridge. There were some *Asplenium ruta-muraria* on the limestone rocks along the way at 44/49751717. After a good lunch we set off back the same way we had come for part of the route, but deviated to take in the delights of *Pteridium aquilinum*. But we did find one oddity in a single specimen of *Dryopteris carthusiana*, staying away from the calcareous substrate by growing on a rotten tree stump at 44/50191729. There was also the treat of some *Athyrium filix-femina* growing down near the river.

All in all a good first outing especially for the wonderful scollies and the hunt for the *Ophioglossum vulgatum*. Thanks to Ron and Pat, our local guides.

Grass Wood and Bolton Abbey Woods, Wharfedale, N. Yorkshire – 15 July (Leader: Barry Wright)

The day began at another Yorkshire Wildlife Trust reserve – Grass Wood near Grassington at 34/983653. We were met by Martin Hanson, who is doing a methodical botanical survey of the wood, and Ellis Tinsley, the warden for the day. Ellis guided us through the myriad paths to the starting point for our study. There was the expected mix of calcicolous species – *Asplenium scolopendrium*, *A. trichomanes* subsp. *quadrivalens* and *Cystopteris fragilis* (34/99206527) along with the other common species such as *Dryopteris filix-mas* and *D. dilatata*. But, more unusually, we came across *Athyrium filix-femina* and, on the leaf mould humus, *Oreopteris limbosperma* (notably at 34/98896547). There were also a very few specimens of what seemed to be young *Dryopteris affinis* subsp. *affinis* or subsp. *borreri*. These were small, but were curious; they had the dark spot at the pinna-rachis junction, but they were not typical of a *D. affinis*. We also came across one plant of *Blechnum spicant* (34/98426550) and the ubiquitous *Pteridium aquilinum*.

After a pleasant lunch under Kilnsey Crag we set off to explore Bolton Abbey Woods. We parked at the car park at the Strid end of the wood (34/059563). This wood was also one exhibiting a mixed fern flora of differing pH tolerances. The main component species were a vast carpet of *Dryopteris dilatata* with some *D. filix-mas*. We took the upper path down the valley. About halfway down the length of the wood was a steep shallow ghyll (34/07135589), above which was *Phegopteris connectilis* and below which was *Polystichum aculeatum*. This general mixing continued with *Athyrium filix-femina*, *Oreopteris limbosperma*, *Cystopteris fragilis*, *Polypodium vulgare* and *Blechnum spicant*.

At the Bolton Abbey end we joined the 'Carriage Walk' back to the car park. It was surprising that we found all of the species we had seen on the upper path earlier plus

Equisetum arvense, *Pteridium aquilinum* and *Gymnocarpium dryopteris*. At one spot the oak fern grew side-by-side with *Phegopteris connectilis* up a steep bank. There were some very large – 1.5m plus – plants of *Athyrium filix-femina* near to the Strid, so called because the whole of the River Wharfe is funnelled through a deep limestone gorge which you can stride over, although it is true that many have tried and some have died. Not recommended!

Truly a wonderful place to see a wide variety of species from the comfort of your carriage!

Dentdale, Cumbria – 12 August (Leader: Alan Meakin)

Alan was persuaded to re-do a meeting he did for the North West group the previous year. We met at Rottenbutts Wood at 34/673888 near Dent Village.

On the road to the wood we came across both *Equisetum arvense* and *E. fluviatile* growing in the verge. In the wood there was the usual mix of common species: male fern (*Dryopteris filix-mas*), *Athyrium filix-femina* and *Dryopteris dilatata*. But Alan was quite correct when he said there were extensive drifts of *Gymnocarpium dryopteris* and *Phegopteris connectilis* in the wood. Other species of note were *Dryopteris affinis* morphotype *insolens*, *Pteridium aquilinum*, *Oreopteris limbosperma*, and *Polypodium vulgare* growing epiphytically on a tree.

After a pleasant lunch in Dent, where we picked up a late arrival, Ken Trewren, we drove up to Stone Rigg at 34/683864 for a trek across the fields to Coombe Scar at 34/677875. This was steep hillside with scree and cliffs above. Of particular note were two affinis's growing side-by-side in the lower scree. These *Dryopteris affinis* subspp. *affinis* and *cambrensis* were clearly distinguishable from a distance. The former seemed to be more tolerant of the exposure on the scree as it was more extensive and was further away from the shading influence of the few rowan trees in the area.

The fitter members scrambled up the slope to the foot of the cliffs for a general explore and eventually turned up *Asplenium trichomanes* subsp. *quadrivalens*, *A. viride*, *Cryptogramma crispa*, *Cystopteris fragilis* and *Asplenium adiantum-nigrum*. On the way back Ken found a bonus in a small stream. There were a few delicate cones of *Selaginella selaginoides* tucked away almost out of sight except to a well trained pteridologist.

As we were so fit we decided to forego the scramble up Flinter Gill, opting instead for the wonderful hospitality of Alan and Freda at their home in Dent. This included a tour of their fern-filled garden. Thanks to Alan and Freda for a wonderful day.

Rossmoor, Allerthorpe Common, Londesborough Cross, East Yorkshire – 2 September (Leaders: Sylvia Medd & Barry Wright)

The last outing of the season was the 'easy' meeting, which was combined with our horticultural event, the visit to Sylvia's garden in Shiptonthorpe and our fund-raising bring-and-buy sale.

The day began with a trip to a wood on a farm recently bought by Mr J. Rotherham. The woodlands were being rejuvenated and we were recommended to go there by one of my colleagues in ADAS, a woodlands consultant. An earlier recce had suggested it might have potential. It certainly had. The most abundant species was *Dryopteris dilatata*, with *D. filix-mas* coming second. There were few plants of *D. affinis*, probably subsp. *cambrensis* but the plants were immature. *Pteridium aquilinum* was uncommon as was *Athyrium filix-femina*. But, the 'turn up for the books' was *Dryopteris carthusiana*. There were a few small, but easily recognisable plants at 44/73574384. We tried hard to make some of the *D. dilatata* into *D.* x *deweveri* but without convincing success.

Lunch at the pub was followed by a somewhat disappointing visit to a Yorkshire Wildlife Trust reserve at Allerthorpe Common. There were certainly plenty of 'real' ferns – i.e. ferns other than *Pteridium aquilinum* – in there, but apart from some better specimens of *Dryopteris carthusiana* it was nearly all the same species – *D. dilatata*. When you've seen one *D. dilatata*, you've seen 'em all. We spent a happy little hour trying to spot the non-dilatatas. We did find a few, notably *D. affinis* subsp. *affinis* and a few more *D. carthusiana*.

But the highlight was a trip round Sylvia's garden. Her one acre garden is open to the public on several occasions each year under various charity opening schemes. It is crammed full of interesting plants including some which don't have spores. But those with spores are maturing well in the increasing number of fern beds and the newly erected shade-house. I don't know if her husband, John, realises that this is just the No. 1 shade-house!

Thanks to Linda Pickering and Sylvia for providing tea and sticky buns before our bring-and-buy sale, thus topping-off another good season of meetings for our group.

Unfortunately this year was tainted by the sad news of the death of Eric Baker and, two days before our AGM, the death of one of our mainstay members, Betsy Kohler, in a tragic boating accident. Our sympathies go to their respective families.

SOUTH-EAST

The Barbican, London – 5 March

Paul Ripley

Ten members and friends attended the first South-East meeting of the Millennium, and were treated to a fascinating and quite unexpected series of delights in a part of the world not normally noted for its flora.

The Barbican development in the City of London includes 4,500 of the most expensive flats in Britain, in the highest residential building in London, in addition to leisure and office facilities. Between the storage and rehearsal areas for the Royal Shakespeare Company and the London Symphony Orchestra lies a site, awkward in area and layout, which has been turned into a series of gardens. Administered by the City, but maintained by the Parks Department, it is embarrassingly expensive to run (heating alone costs £400.000 per annum), serves as a venue for corporate hospitality and is only sporadically open to the public. Operating in a symbiotic relationship, Stefan Czeladzinski maintains the National Collection of *Selaginella* here, and is largely responsible for the number of unusual and exotic ferns scattered throughout the garden.

Mention should be made of the rock garden, where fine clumps of *Asplenium marinum* (of Chinese origin) flourished, but the bulk of the garden is covered by glass. It is an uncompromising environment, consisting of shallow and poorly drained clay beds, with a rather dry atmosphere and variable light levels. It also has a very high roof, which perhaps accounts for the heating bill but also allows some mature and handsome specimens of *Dicksonia antarctica* to be accommodated. Ferns of particular interest were the several very large *Asplenium nidus*, *Tectaria* spp., *Actiniopteris* and a number of *Phymatosorus (Microsorum)* (e.g. *P. scandens*) and *Elaphoglossum* species. *Cyrtomium falcatum* and adiantums grew everywhere almost as weeds.

The highlight of course was Stefan's *Selaginella* collection. A few were planted in the beds, but most were housed in pots permanently covered by polythene flasks. Stefan has clearly become an authority on growing this large (about 750 species) and difficult group, and his knowledge was enormously impressive. He had prepared a handout summarising the characters of the group and illustrating some of the interest and diversity. All of

Stefan's plants were well grown, receiving great care, and many were handsome and beautiful. *S. erythropus*, with its strong red colour, would be an award-winning plant in many a display. Many are hardy (given protection from drought) and deserve to be better known and more widely grown.

Our day next included a trip to the Columbia Road flower street market, where an extraordinary selection of plants, some very good value, were being sold on either side of an undistinguished East London street. Steve Munyard spotted *Dicksonia squarrosa* among the more usual *D. antarctica*. Most of us finished the day with a late lunch at a convenient Wetherspoon pub, and all were most grateful to Stefan for sharing his knowledge and providing some quite unexpected treats.

Walliswood, Surrey – 24 June **Pat Acock**

Graham Ackers was our host for the day and a splendid host he turned out to be. We could have used a few more members but this did not detract from the proceedings. Graham had produced a collection of papers to help us during the day which was to be in three parts.

Firstly we followed the footpath opposite the car park at 51/119381 through a wood towards the local church. In the wood a number of small rivers cut into the sandy soil and joined one another, eventually making two deeper valleys. We thought at first that we were only going to see the commonest three ferns typical of these nutrient poor soils: *Dryopteris dilatata*, *D. filix-mas* and *Pteridium aquilinum*. However, on searching deeper in the woods we were able to add *Dryopteris carthusiana*, *D. affinis* subspp. *affinis* and *borreri*, *Asplenium scolopendrium* and *Athyrium filix-femina*. The church had been repointed recently and did not host any ferns on its walls, although just beyond it we found *Polypodium vulgare*. We returned along another deep cut valley that, for no obvious reason, proved considerably more barren of ferns.

It was at this point of the day that our host bought us a round of drinks and we enjoyed lunch in the 487-year-old inn. Afterwards we drove just half a mile or so to Wallis Wood Nature Reserve at 51/121388 where Graham introduced us to Sue Cooper, the Warden. Sue explained that this oak/hazel coppiced woodland was becoming increasingly rare in the South-east and the Surrey Wildlife Trust had been grateful for having the opportunity to acquire it. We were to survey it for her and Graham carefully plotted our finds on the detailed maps he had issued us with earlier and later produced a report with management recommendations.

We quickly re-established the presence of *Dryopteris carthusiana*. Sue had taken us to see *Blechnum spicant* and mentioned that one of the plants the wood was reported to have in it was the violet helleborine *Epipactis purpurata*, which she hoped to find. Hardly had the words left her mouth when Peter Clare spotted a helleborine within a yard of us. I think we should go back to confirm the species once it is mature. Sue also told us that the wood had many characters of ancient woodland: beside the hornbeams there were wild plums and pears and also a few wild service trees. We found all the ferns seen in the morning as well as a fine colony of a crisped form of *Pteridium aquilinum* and a few very large specimens of *Dryopteris carthusiana*.

The third strand of the day was the visit to Graham and Lesley's house to see their ferns, or was it for the cream tea – both were equally fine. Graham has an exquisite collection of ferns raised from spores and bulbils as well as ones sought out from nurserymen. Many of them are plants that he has come to love from his many fern forays around the world. He has a large shaded border as well as other areas of the garden, ponds and stream bank covered in hardy ferns. Inside his greenhouses, which he keeps just frost free, he keeps the more tender Oceanic ferns, while those that need a little more heat fill the conservatory.

Later, the remaining pteridologists had to be torn away from Graham's study where he keeps his wonderful collection of fern books.

I would like to thank Graham for the diligent way he had planned a day involving very little travelling but that had three very different aspects to it, and Lesley for tolerating our lingering on into the evening.

Brockenhurst, New Forest, Hampshire – 2 September **Paul Ripley**

Six members of the BPS South East group joined about 15 members of the Hampshire and Isle of Wight Natural History Group for a joint meeting organised by Catherine Chatters. Two people were actually members of both groups.

Roydon Woods (we met at 41/305009) lie just outside the New Forest and comprise extensive low-lying mixed woodland. The soil is essentially acid but is sufficiently enriched with bases to permit *Polystichum setiferum* and *Asplenium scolopendrium* to grow commonly. The walk from the car park set the scene, with *P. setiferum* growing next to *Blechnum spicant*. Other species were *Athyrium filix-femina*, *Dryopteris filix-mas*, *D. dilatata*, *Pteridium aquilinum* and *Polypodium* sp.; *P. interjectum* was the most likely species, but in lanes near the wood *P. interjectum* grew close to plants which were probably *P. vulgare*. We were taken first to see *Dryopteris aemula*, unusually growing on a very low stream-bank, and *Osmunda regalis*. Further into the wood *Dryopteris affinis* became much more common than *D. filix-mas*, and we saw *D. affinis* subspp. *borreri* and *affinis*. *D. carthusiana* was abundant in moister sites, becoming the dominant fern in some areas. *Equisetum telmateia* was common and locally abundant, especially near the pond where we had lunch.

In the afternoon we visited Jo Basil's garden. Jo kindly provided us with tea, and we saw some very well grown ferns including a very handsome *Pellaea atropurpurea*.

Finally, after a visit to Spinners nursery where among other things North American *Dryopteris spinulosa* was for sale (I maintained this was different from *D. carthusiana*), Andrew Leonard kindly took us to see the *Ophioglossum azoricum* site in the car park at Warwick Slade (41/271065). Although late in the season and difficult to spot, the plants were quite abundant.

I think we were a little reticent and reluctant to show our own expertise; we had some very knowledgeable guides and joint meetings like this can only be beneficial.

Sheffield Park, and Rosemary Hibbs' Garden, Hailsham, East Sussex – 14 October

Paul Ripley

Nine members of the South East group met at the famous Sheffield Park Gardens landscaped by 'Capability' Brown. This National Trust property is centred around three large lakes. The previous week had been exceptionally wet, with flooding in many parts of East Sussex, but although certain areas were cordoned off, the grounds had recovered remarkably well. Sheffield Park is famed for its autumn colours, and the trees, especially the acers and redwoods were magnificent. It is not particularly ferny but the *Osmunda regalis*, sporing happily near the waterfalls, were very fine. *Matteuccia struthiopteris* is naturalised near a stream gully where it grows with *Onoclea sensibilis*, the latter only surviving in shade under a footbridge over the stream.

After lunch, inevitably at Sheffield Park station on the Bluebell Railway, we called in at a garden centre visited by Steve Munyard a few years previously. Alas! Not only had the garden centre become part of the Wyevale chain, but we were held up by the chaos following a horrendous accident which closed the A22 for several hours.

We made it to Rosemary Hibbs' home eventually, and were again fascinated by her garden. Not only is there a wealth of ferny interest, with plants in the most unexpected places, but Rosemary's family have a number of memorabilia in the garden, including a working semaphore railway signal, which had been lit for our visit. We were also fascinated by Rosemary's collection of insectivorous plants and were pleased to see evidence of her skill in fern-raising, especially of adiantums.

After tea we were entertained by slide-shows of visits made by Graham Ackers to remarkable sites on the Azores, and by other members to North Spain (GEP meeting) and south-east Australia, finishing with tree-fern artistry by Jennifer Ide. Our grateful thanks are due to Rosemary and her family for their warm hospitality and for the trouble they had taken to provide us with such an interesting visit.

EAST ANGLIA

Indoor Meeting, Little Thurlow, Suffolk – 30 January — Rosemary Stevenson

The pleasure of having the opportunity to get together with others in the group during 'The Close Season' for ferns was apparent on the faces of members as they gathered for the now traditional mid-winter meeting. Once again Mary Hilton kindly welcomed us into her home and the splendid large room, with log fire blazing, which makes such a perfect setting for this occasion. Seventeen members and friends attended and were soon volubly exchanging news or viewing the golden carpet of aconites in Mary's garden while our speaker for the day, Patrick Acock, prepared all that he had brought to interest us.

After a brief synopsis of his own long interest in ferns, dating back to 1966, Patrick gave us an interesting illustrated talk about the history and activities of the GEP (Group of European Pteridologists). This organisation was founded to provide a forum for amateur and professional pteridologists to discuss ideas and knowledge about pteridophytes in the field on a regular basis, visiting different European countries/habitats and giving people the opportunity to see species they are not familiar with. In 1991 Paul Ripley organised a BPS field meeting in Brittany. A variety of other pteridological excursions in Europe followed on under different guises and the GEP was launched in 1995 with a visit to Southern Spain. Since that successful meeting members have enjoyed trips to various European countries.

Patrick then went on to show slides of the 1999 GEP visit to the Bavarian Alps. Here they were able to view at one site seven lycopods, including four species of *Diphasiastrum*, and *Athyrium distentifolium*. At another site in a quarry they were pleased to be able to examine two aspleniums: *Asplenium cuneifolium* and *A. adulterinum*, while on a journey high up in the mountains they were shown a bright green moss growing in caves which the Germans called 'luminous moss'. Here too, were *Cryptogramma crispa* and *Cystopteris fragilis* and, on the lower slopes, examples of beech fern. We were also told of their experiences during a brief excursion over the border into the Czech Republic where they found a bleak landscape of rocky rubble which, not surprisingly, supported a somewhat sparse variety of vegetation. The desolation was all the more apparent as, for the first ten miles beyond the border, every building had been raised to the ground. Despite this unpromising terrain, by dint of being taken on a whistle-stop tour of seven sites, members were fortunate enough to see *Botrychium matricariifolium* and *B. lunaria* and *Asplenium septentrionale*, existing here, it was thought, because they are not attractive to slugs which were obviously a deterrent to the survival of other plants in this very wet area.

In conclusion, Patrick emphasised the role of the GEP in drawing together people of many nationalities through their common interest in ferns, and the importance of British members being involved, rather than taking an insular view and not looking beyond our own shores.

Our meeting drew to a close with a chance to see (while enjoying Mary's delicious refreshments) the many items of ferny interest brought by those present. Reluctantly members then departed into the dark, cold night but with the feeling that the winter had somehow been shortened and the new season's meetings could now be eagerly anticipated.

Bradfield Woods, Suffolk and Sylvia Norton's Garden, West Wickham, Cambridgeshire – 11 June

Tim Pyner

Eleven members met at Bradfield Woods near Bury St Edmunds (52/934581). These are ancient woodlands with a rich ground flora and a good variety of shrubs. Our leader was Angie Steel who lives locally and has an intimate knowledge of the woods. The soil is boulder clay with some areas of overlying acid gravels. Bracken, *Pteridium aquilinum*, was abundant in the acid areas. Male fern, *Dryopteris filix-mas*, was frequent throughout the wood. Also of interest was the abundance of both wood avens, *Geum urbanum*, and water avens, *G. rivale*, and a range of hybrids between them. Broad buckler, *Dryopteris dilatata*, and narrow buckler fern, *D. carthusiana*, were abundant in places, particularly in a non-intervention area to which we were allowed access. Scaly male fern, *D. affinis* subsp. *borreri*, and lady fern, *Athyrium filix-femina*, occurred as scattered plants throughout the woods. Other plants of interest seen were leaf rosettes of oxlips, *Primula elatior*, and frequent common spotted orchids, *Dactylorhiza fuchsii.*

After a picnic lunch we met at Sylvia Norton's garden at West Wickham. Sylvia's garden is well known as the home of the National Collection of *Lathyrus*, of which she has an extensive knowledge. We were treated to a guided tour of this fascinating collection along with the rest of the garden which has many interesting and beautiful plants. Sylvia also has a keen interest in ferns which thrive here despite the unhelpful climate in this part of England. Various *Dryopteris*, *Polystichum* and *Polypodium* varieties have been planted throughout the garden and add excitement for the pteridologist. Even acidophiles such as *Blechnum chilense* and *B. penna-marina* were thriving.

A very pleasant day was completed by Sylvia's marvellous tea, well up to the standard for which the East Anglian Group is renowned.

Catfield Fen and Winterton Dunes, Norfolk – 9 July

Anne Beaufoy

Sunday 9th July was a day of varying weather with the rain, at times torrential, graciously relenting to allow 15 members and friends to visit our two chosen venues. Steve Munyard kindly led the group of keen fern enthusiasts in a part of England not renowned for a proliferation of species but which boasts one particular treasure.

Our first call was at Catfield Fen (63/369215) near Barton Broad, administered by the Butterfly Preservation Trust as a site for the swallowtail, whose young larvae we saw on milk parsley. The area includes sheltering carr of alders and oaks where *Dryopteris dilatata* flourishes. Dykes of rich, dark water, the habitat of yellow waterlily, frogbit and bladderwort divide these areas from the adjacent more open fen where the reed beds are dominated by *Phragmites*, bog myrtle, hemp agrimony and birch scrub, in the understorey of which runs *Thelypteris palustris*. On relatively less wet islands of *Sphagnum* amongst the standing-water flora grew our goal – sturdy plants of *Dryopteris cristata* with attendant *D. carthusiana*, and after a little search the hybrid *D.* x *uliginosa* was found. *Osmunda regalis* added its splendid presence.

We repaired to Winterton Dunes Nature Reserve (63/496198) on the coast only a few miles away to find the dry dunes and freshwater slacks giving such a sharp contrast to the Broadlands environment of Catfield, yet two fern species manage to colonise both. *Dryopteris dilatata* albeit in 'bonsai form', occurs in the low heathland herbage while

Osmunda flourishes, with spore heads rampant, as thickets in some of the hollows. We also found a polypody, probably *Polypodium vulgare*, amongst the roots of heather, bedstraw and lichen. A few rather greasy looking pools provide damp areas and we were delighted to see tiny toadlets of the Natterjack scuttling among the bog pimpernel at the edges.

The day's activities concluded with a welcome and wonderful spread of refreshments kindly provided by Bryan and Gill Smith at their recently acquired house and delightfully sheltered garden at Oulton Broad, where their fern collection will doubtless thrive.

Weald of Kent – 10 September

Barrie Stevenson

Our early autumn meeting took us south of the Thames with Steve Munyard as our leader. A group of 14 members and friends enjoyed the warm, sunny day during which we saw a fine tally of ferns, many of which are totally unknown in East Anglia. We met at the church of Eridge Green on the A26 south of Tunbridge Wells for the short walk to the Sussex Wildlife Trust Nature Reserve at Eridge Rocks (51/557357). This is a vast outcrop of grey sandstone, weathered into often grotesque shapes; such outcrops are distinctive features in this area of Kent.

Steve first led us through a narrow cleft between two high rocks towards a raised area where we found *Hymenophyllum tunbrigense*. However, the recent cutting back of *Rhododendron ponticum* had left the site exposed, and the fronds showed distinct signs of desiccation. We walked further around the rock formation, passing stands of *Dryopteris dilatata* and *Pteridium aquilinum* to an area which had not been cleared and found, in a short section of sheltered pathway, good specimens of *Blechnum spicant*, *Athyrium filix-femina*, *Dryopteris filix-mas* and *D. affinis* subspp. *affinis* and *borreri*. We found also, in an area partly overhung with tree branches and on inclined rock surfaces, two large patches of *Hymenophyllum tunbrigense*, the more exposed of the two with many fertile fronds bearing typically toothed indusium valves.

photo: Jane Collins

East Anglian Regional Group's visit to Eridge Rocks, Kent.

Standing: Barrie & Rosemary Stevenson, Karen Munyard, Bryan & Gill Smith, Peter Clare, Anne Beaufoy, Marie Winder, Tim Pyner, Steve Munyard, Geoffrey Winder.
In front: Linda & Mick Craddock.

After a picnic lunch we made our way to a site to the south-east of Eridge Green, on the A267 (51/582335). We walked through the roadside woodyard to the woodland beyond at Saxonbury Hill. Here we found head-high stands of *Pteridium aquilinum* through which a narrow pathway had been cleared earlier that morning by Steve (ably assisted by Peter Clare), towards their landmark, a distant yew tree. This tree was absolutely vital to the site as it sheltered a damp bank which supported a thriving colony of *Hymenophyllum tunbrigense* and also a splendid group of *Dryopteris aemula*. In a deep hollow below the tree we also found *Oreopteris limbosperma*, *Dryopteris* x *complexa* (previously known as *D. tavelii*), *D.* x *deweveri* and *D. carthusiana*. Our visit to Saxonbury Hill was in fact a nostalgic reminder for Steve of the Inaugural Meeting of the South East Group (led by Clive Jermy) at this site on 8th July 1984.

The East Anglian Group are most grateful to Steve for sharing with us his knowledge of such fern-rich locations, and making our Kentish sojourn such a resounding success.

We rounded off our day by driving to Paul and Linda Ripley's garden to the north of Tonbridge. Here we found Paul's ferns (mainly a large collection of *Polystichum* and *Dryopteris*) growing very happily in a splendid woodland setting, while more tender ferns thrived in a polythene tunnel. Linda had provided a tremendous spread of refreshments for our visit and, grateful for such generous hospitality, we rounded off an excellent day by sitting in the late afternoon sunshine, sipping tea and nibbling scones and cakes in a typically English fashion.

End of Season Indoor Meeting, Barrow, Suffolk – 29 October Barrie Stevenson

At the time of writing we are looking forward to our traditional autumn get-together at the house of Marie and Geoff Winder.

The programme will include slides and videos of ferns in America and New Zealand, and displays of photographs of National and Regional BPS meetings, fern-ware boxes and book-bindings and a photographic record of the fern-decorated ceramics, glass and treen from the Reserve Collection of the Museum of North Devon at Barnstaple. The afternoon will conclude with the delicious refreshments without which this particular occasion would not be complete.

NORTH-WEST

Millennium Supper and Lecture, Crooklands Hotel – 1 April Melville Thomson

This was a social occasion instigated during our 1999 AGM in response to a request by members who wished to celebrate the new millennium. The deal was that a good night out would be justified only if legitimised by cultural overtones with an emphasis on pteridology. The proposal was carried and the group accepted a suggestion that the topic should be fossil ferns. We were fortunate in enlisting the support of Dr Margaret Collinson, Reader in Plant Palaeobiology, Geology Department, Royal Holloway University of London to provide the 'overtones'. She chose to broaden the subject to 'Fossil Ferns and their Allies – a tour through 450 million years of earth history'. It was felt that consideration of this enormous span of time would help us keep a sense of proportion about the mere 2,000 years that we were celebrating.

In the event, forty-six North West Group members turned out for the evening and were augmented by guests from the Westmorland Geological Society who appreciated this opportunity to share common ground. Dr Collinson, with the aid of an impressive selection of slides and samples, ambitiously surveyed the development of ferns and related

pteridophytes, from the primitive *Rhacophyton*, a fern-like plant of Devonian times, through to the diversity of the Carboniferous and Jurassic flora. She demonstrated, using fossil evidence, how many evolutionary paths had failed while some had successfully led to the range of present-day ferns. Even more bravely, she demonstrated the technique of creating acetate casts of acid-etched fossils, not easy with make-shift equipment in a hotel lecture room instead of a laboratory. She was able to show, however, how the finest detail can be captured in this way and used to study the distinctive features of long-gone ferns. The lecture was very well received and an appreciative vote of thanks was proposed by Alastair Wardlaw.

The evening concluded with an informal dinner at the hotel which launched the Group into the next 1,000 years with a feeling of satisfied contentment of mind and body.

Grange in Borrowdale, Cumbria – 10 June

Peter Hindle

On a cool, blustery but sunny day eighteen of us assembled at the Bowder Stone car park (35/252168), situated at an altitude of 90m. We were pleased to welcome several members making their first outing with us. Annual rainfall at nearby Keswick is 1524mm but is much higher up the valley. The rock type is Borrowdale volcanics. We walked along the road and over the bridge into Grange village, examining good specimens of *Dryopteris affinis* (which always provoke discussion), *D. filix-mas* and a profusion of *Pteridium aquilinum*. The bridge over the River Derwent gave us *Asplenium ruta-muraria*, *A. trichomanes* subsp. *quadrivalens* and *A. ceterach*. All were confined to the leeward side, an indication of the strength of the prevailing wind. In 1994 many of us had noted *Polypodium interjectum* 'Ramosum' on a wall in Grange and were pleased to see it still flourishing along with 'normal' *P. interjectum*.

The group then moved up the valley and was soon examining *Athyrium filix-femina* and *Dryopteris dilatata* along the laneside. As the slope increased *Blechnum spicant* made an appearance along with *Cryptogramma crispa*, the latter low down on a dry-stone wall. On a more level, damp area we found good stands of *Oreopteris limbosperma*. At this point 'scouting parties' explored a damp shady slope and reported a profusion of *Hymenophyllum wilsonii* (in 1994 we had found only a few specimens). An extra bonus for the searchers was a number of plants of *Dryopteris affinis* subsp. *borreri*. As our route passed through woodland we were able to record both *Gymnocarpium dryopteris* and *Phegopteris connectilis*. The more nimble of the group then ascended a steep slope and examined *Asplenium septentrionale* (noted some years ago) flourishing in cracks on a sheer rock-face. A higher ascent on rock scree gave us *A. adiantum-nigrum*, which had not previously been noted in this area by our Group.

After lunch we circled Castle Crag, seeing many of the ferns already mentioned: the caverns (probably small quarries), while yielding *Gymnocarpium dryopteris* in quantity, gave us no surprises. Our surprise was to find, near the river, a well established colony of *Onoclea sensibilis*. Jermy and Camus (*The Illustrated Field Guide to Ferns and Allied Plants of the British Isles* p.190) say "*a few well-established populations exist in Cumbria some distance from an obvious source of introduction*".

The excursion ended at the home and garden of Nan Hicks, with afternoon tea and time to study her fern collection and a rich variety of other plants. On our way back to the Bowder Stone we looked at fronds in the churchyard and opinion was that we could probably include *D. oreades* on our list, which brought the count up to 19 species and one variety.

Many thanks to all members whose knowledge and advice made the day such a success. Special thanks to Nan and Sam Hicks for their generous provisioning of the party.

Gait Barrows NNR and Hutton Roof Crags NNR – 1 July — Mike Porter

Situated at about 30 metres above sea-level in the far north of Lancashire, Gait Barrows NNR (34/480772) consists of a large area of limestone pavement surrounded by deciduous woodland, much of the reserve being on a warm south-facing slope. Although some damage has been done in the past, large sections of the pavement have remained undisturbed and are home to a wide range of colourful plants and many different species of butterfly. Twenty-two members of the North West group met here on a warm sunny morning to investigate the fern flora of the reserve and to compare it with the higher, colder limestone pavements at Great Asby which were visited in 1999.

The wooded areas around the pavement hold a good collection of common ferns – *Dryopteris filix-mas*, *D. dilatata*, *Athyrium filix-femina* and *Asplenium scolopendrium* being well represented. However, the landscape changes dramatically as the dense encircling trees are left for the open pavement. Here are wide expanses of smooth limestone split by grykes and pock-marked with water-worn holes and, after the shade of the woods, the sunlight reflecting on the pale rocks can be dazzling. In the cracks and holes in the limestone we found good quantities of *Polystichum aculeatum*, *Asplenium ruta-muraria* and *A. trichomanes* subsp. *quadrivalens*. There were also scattered clumps of the limestone speciality *Dryopteris submontana* whose greyish fronds, like those of many of the other ferns, rarely appear above the surface of the limestone, preferring the moist shade within the grykes to the desiccating climate above. As we investigated the extensive pavements we noted many interesting non-fern species including northern bedstraw (*Gallium boreale*), the attractive dark-red helleborine (*Epipactis atrorubens*) and numerous plants of the scarce fingered sedge (*Carex digitata*).

A surprising addition to our list of ferns was a fine specimen of *Dryopteris carthusiana* found earlier by a member of the group in a somewhat moister area below the pavement and we were pleased to discover an attractive patch of *Asplenium ceterach* as we made our way back across the pavement for lunch. Interestingly, we had seen no specimens of either *A. viride* or *Gymnocarpium robertianum*, often common plants of this habitat, but the low altitude of Gait Barrows provides the explanation for their absence.

After a convivial lunch the party, much reduced in size, moved on to Hutton Roof Crags (34/555780), another limestone pavement but situated considerably higher than Gait Barrows, at about 260m. We quickly added new species to our list for the day including *Cystopteris fragilis* and *Phegopteris connectilis*, this latter growing on humus on the edge of a small patch of woodland and noted earlier by two members of the group. Even before we reached the pavements proper we found large quantities of *Gymnocarpium robertianum* growing abundantly on limestone clitter close to the path. In this same area we also spotted a few plants of fly orchid (*Ophrys insectifera*). The limestone pavements themselves held good quantities of *Dryopteris submontana*, *Gymnocarpium robertianum* and *Polystichum aculeatum* but, as we had noted on previous visits, very little *Asplenium viride*, probably because of the moderate altitude of the site. On the Orton limestones, rising to over 400m, this species is much more frequent.

The early sunshine had now given way to cloud but the weather was still warm as we made our back to the road and it was not until we were heading for home that rain started to fall.

Coniston and Grizedale, Cumbria – 29 July — Jack Garstang

In a sustained July heat wave nineteen members assembled on the road alongside Church Beck, Coniston (34/301978), for a not-too-strenuous walk around the village. Stone walls – boundary, free-standing, retaining, bridging, dry-stone and mortared – were the main man-made habitats en route. Within a few yards of the cars an extensive colony of the calcicole

Asplenium trichomanes subsp. *quadrivalens* mixed with a few plants of *A. ceterach* populated the side of an old boundary wall, put together with a mortar of slaked lime and coarse grit. The wall top was one continuous line of *Polypodium interjectum*, thriving on the more acid detritus accumulated in the capstones, terminating with a single representative of *Dryopteris filix-mas.*

Looking over the bridge in the village centre we saw a cristate *Athyrium filix-femina*, *Polypodium vulgare*, *Asplenium scolopendrium* and *A. trichomanes*. *Dryopteris filix-mas*, *D. affinis* subsp. *cambrensis*, *Athyrium filix-femina* and *Polypodium interjectum* flanked the road leading up to the Sun Hotel. An adjacent cottage garden displays a huge *Osmunda regalis* in an elevated position and in superb condition, its rhizome base – about two feet in diameter – showing its age. Beautiful *Athyrium filix-femina* overhung one side of Station Road Beck, matched on the other side by mature *Dryopteris dilatata.* A retaining wall on the Miners' Track holds an ever-increasing colony of *Asplenium adiantum-nigrum*. *Cryptogramma crispa*, *Oreopteris limbosperma*, *Asplenium ruta-muraria* and *Pteridium aquilinum* (sporeless) gave us plenty to talk about on the walk over Miners' Bridge and back down the Coppermines track to the cars.

Lunch was enjoyed at The Kennels Road car park picnic site (34/3394) overlooking Grizedale Beck, the cool forest and dappled shade providing a welcome contrast to the hot and busy Coniston village. The car park gave us another fern, *Onoclea sensibilis*, obviously a garden escape.

After lunch we went over the bridge to follow the path southwards alongside Grizedale Beck below the steep fern covered slopes of Bank End. *Dryopteris affinis* (we thought we found subspp. *affinis*, *borreri* and *cambrensis)*, *D. filix-mas*, *D. dilatata*, all large, mature and numerous, covered the slopes and the path side. Huge *Athyrium filix-femina* overhung the stream and *Blechnum spicant*, *Oreopteris limbosperma*, *Polypodium vulgare*, *P. interjectum* and a possible *P.* x *mantoniae* were found on stream banks and walls.

photo: Jack Garstang

North West Group members seated on a sculpture in Grizedale Forest.

Thelma Tate, Geoff Wilkins, Melville Thomson, Harvey Shepherd, Alec Tate, Joan Hindle, Ron Copson, Marjorie Garstang, Peter Hindle, Graham Mathews, Di Copson, Brian Haskins, John Daffern, Julie Wilkins, Marion Mathews, Ann Haskins.

Crossing over the road near the Visitor Centre into the lane leading to Knott Coppice woods we passed a high retaining wall covered with *Asplenium trichomanes* and *A. ceterach*. The *A. ceterach* fronds were totally reversed and inrolled, their rusty backs recalling the plant's old name of 'Finger Fern'. The lane, with its high elevated banks lined mainly with *Dryopteris affinis*, *D. filix-mas* and *Athyrium filix-femina*, gave us the unusual prospect of looking up and through the ferns.

Our last 'site' was the forest sculpture no. 1a, 'Quarry Structure', a work of art by Richard Harris (1980). Shaped like a giant millipede, but also resembling a scolly, this fine specimen was well able to support the whole party on its 'midrib'. The final destination was the Visitor Centre café for tea and cakes.

Isle of Bute, Argyll – 24-25 August
(Leaders: Melville Thomson & James Merryweather) **Jack Garstang**

Our first venture outside the North West area developed into a joint meet with BPS Scotland Group members on the Isle of Bute, where thirty members enjoyed marvellous summer weather throughout. Most members stayed in the Ardyne St Ebba Hotel and Restaurant, where we all assembled for dinner on the Wednesday evening with our guests Katherine and Wallace Fyfe and James Merryweather. After dinner, we listened intently to the history of the struggle and work which had gone into the restoration of Ascog Hall Fernery, beautifully articulated by Katherine Fyfe. Les Dugdale presented Katherine with a finely dissected *Nephrolepis* 'Suzy Wong'.

Geologically, Bute lies across the Highland Boundary Fault between Rothesay on the east coast and Scalpsie on the west coast, marked by Loch Fad and Loch Quien which almost cut the island in two. South of this line is old red sandstone and lava flows, to the north are schists. Sheltered from the south-west by Arran and from the north by Cowal, Bute's climate tends to be drier, milder and less windy than the more westerly Scottish Isles.

Thursday morning was given over to a visit to Ascog Hall Fernery and Gardens (26/1063). This Victorian sunken fern garden surprisingly has no heating system and relies on being largely underground to protect its many non-hardy ferns during the winter months. Here are well over 100 subtropical ferns, mainly from Australasia and Central America, forming a collection reconstructed from an inventory of fern species dating from the original installation of 1870. *Dicksonia antarctica* and large beds of the *Dryopteris affinis* group feature in the surrounding garden overlooking Ascog Bay. Our hosts Katherine and Wallace Fyfe kindly invited us to join them for tea and coffee in the Hall.

The afternoon saw us moving on to Mountstuart (26/108594), the architectural fantasy of the third Marquess of Bute, situated in 300 acres of designer landscape. This Victorian extravaganza has an extraordinary second floor master bedroom with double folding doors opening onto a large heated roof top conservatory filled with Chusan palms, tropical ferns and other exotic plants. Outside, *Polystichum aculeatum*, *P. setiferum* 'Divisilobum', *Dryopteris filix-mas* and *Asplenium scolopendrium* decorated the fringes of a landscaped waterfall. Under the canopy of this huge parkland were large stands of robust *Dryopteris affinis* plants over one metre tall. James Merryweather took a small party to explore further while others made their way back to the cars and the hotel.

On Friday morning we went to Dunagoil Bay (26/0853), a small sandy cove in the south-west corner of Bute, overlooked by columnar basalt cliffs. We found *Asplenium adiantum-nigrum*, *A. ruta-muraria*, *Dryopteris filix-mas*, *D. dilatata*, *Pteridium aquilinum* and *Polypodium vulgare*. On the cliff faces were colonies of *Asplenium marinum*, one with very large fronds, well hidden in a deep cleft. In the darkest recess of a cave we found the

gametophyte of *Trichomanes speciosum* covering about one square metre of rock. The slender filaments were examined *in situ* with a hand-held self-illuminated 100x microscope.

A 15 mile drive to the north end of Bute took us to Balnakailly Burn (26/0274) with its surrounding woods, rocky outcrops, very long grass and head-high bracken – quite rough going but a very sheltered location. After many years of searching we now at last saw a definitive plant of *Dryopteris expansa*, 70cm tall, finely cut and looking superb. Here were three *Dryopteris* species growing side by side in a group: *D. aemula*, *D. dilatata* and *D. expansa* – a wonderful sight! *Hymenophyllum tunbrigense* and *H. wilsonii* were also growing together on many rock-faces. A climb down to the burn revealed blankets of *Dryopteris aemula* on its banks while *D. filix-mas*, *Athyrium filix-femina* and *Blechnum spicant* were found on the way out.

With some members having to catch an evening ferry off the island we split at this point with one group going further into the woods. It just remains for me on behalf of the group to thank James Merryweather for his help and guidance on Bute.

Swindale, Cumbria – 16 September

Robert Sykes

We did not feel that we did justice to this area last year (1999 *Bulletin* Vol. 5 no. 4 p.179) so eight of us went back for another look.

The best new ground was a gully high on the right as we approached the valley head (35/496115) which yielded *Polypodium vulgare*, *Oreopteris limbosperma*, *Athyrium filix-femina*, *Dryopteris affinis* subsp. *affinis*, *D. dilatata*, *D. expansa* (Jack Garstang asserted), *Cryptogramma crispa*, *Asplenium trichomanes*, *Phegopteris connectilis* and *Polystichum aculeatum* in a vertical rise of only 60 metres from an altitude of 500 metres.

From there we traversed the crags, finding at various times in addition *Gymnocarpium dryopteris*, *Dryopteris filix-mas*, *D. oreades*, *D. affinis* (*paleaceolobata* we thought), *Cystopteris fragilis* and *Asplenium viride*. The *A. viride* was not common, but there were several plants scattered about and one outcrop had seven clumps of it growing within a square yard or two – with *Cryptogramma crispa*, the arch calcifuge, in the middle of it. We felt privileged perched high above the valley bottom on a warm autumnal day, looking down Swindale with its crags and its drumlins. It is not just because it is beautiful that it is special; it is not usual for a Lake District valley head to be as rich as this in ferns and other flora. I still do not think that we have seen all there is to be seen there. We did not find the sheets of *Dryopteris oreades* that was so plentiful in 1983; either it has been comprehensively mown by the sheep, or it has succumbed to the bracken. And again we lacked the energy to hunt down the filmy fern.

AGM, Holehird, Windermere, Cumbria – 7 October

Mike Porter

The venue for our seventh AGM, attended on this occasion by 30 members, was once again the Garden Room at Holehird. Last year we had decided to try a full day for the AGM and the success of this experiment encouraged us to repeat the formula. Thus the day started with tea, coffee and biscuits, followed by a tour of part of the gardens, expertly and entertainingly led by Cynthia Kelsall. The steadily falling rain was only a minor inconvenience as we looked at a wide range of attractive plants, paying particular attention to the many ferns which thrive here, the highlight being the National Collection of *Polystichum*.

Lunch then followed and there was time to browse through the reports, specimens and photos of the year's field meetings, to buy or just examine the wide variety of ferns for sale or simply to chat with friends.

At 2 o'clock the official business of the day was transacted, including a brief summary of the year's highly successful and varied field meetings and suggestions for the programme for 2001. There followed an absorbing and detailed account by Heather McHaffie, entitled 'The Alpine Lady Fern in Britain' in which, with the aid of slides, she recounted her work on *Athyrium distentifolium*. She explained that the endemic *Athyrium flexile* is simply a variety of *A. distentifolium*, occurring within populations of the latter on impoverished soils at altitudes of above 750m in the Central Highlands. It is a recessive form that has a distinctive appearance, being smaller in size than the type variety and with a markedly deflexed petiole. However, it is able to produce spores in a lower nutrient environment and thus, in a limited number of sites, is able to compete. Three large populations are currently known with occasional plants occurring elsewhere. The talk was followed by an enjoyable and lengthy discussion and many members were even happier when given specimens of both var. *flexile* and the type variety to take to good homes!

The final business of the day was the consumption of the customary delicious tea provided by members and the presentation of prizes. These went to Les Dugdale (crossword – won on a cunning tie-break), Harvey Shepherd (*Polystichum*) and Jack Bouckley (small fern). Les now has the task of devising a ferny puzzle for next year.

CORNWALL

Rose Murphy

Carn Galver, West Penwith, West Cornwall – 2 May

On a really wonderful sunny day we held our first field meeting for the year – a visit to Carn Galver (10/4236) in West Penwith where we were joined by the National Trust Warden for the area, Joe Oliver. Despite the recent fire that had damaged much of the site we were able to find both filmy ferns, *Hymenophyllum tunbrigense* and *H. wilsonii* surviving well on the granite exposures on the north-east slope of the Carn (10/425365) and a good list of ferns was made, including *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris affinis*, *D. dilatata*, and *D. aemula* which was growing at the southern end of the Tor (10/427360). It was interesting to observe how the ferns were faring despite the strength and extent of the fire. All those previously recorded in the area were throwing up new fronds, particularly the bracken!

After a picnic lunch we walked west towards Rosemergy (10/418363), stopping at intervals to observe the many large plants of *Asplenium obovatum* subsp. *lanceolatum* on the granite hedgewalls, some growing with *A. adiantum-nigrum*. Hopefully we searched for any plant that could possibly be the hybrid between the two, but none could be found. *Dryopteris dilatata* and *D. filix-mas* were abundant in wetter areas along the grass verges, while more *D. aemula*, growing low down on the hedgewalls, was in that uncurling stage that so well marks it as distinct from *D. dilatata*. Mortared walls by the old mine engine house below Carn Galver (10/421363) supported *Asplenium scolopendrium* and *A. trichomanes* subsp. *quadrivalens*, while a large pond nearby proved an irresistible attraction, this producing *Osmunda regalis* (10/420364). Both *Polypodium interjectum* and *P. vulgare* were seen, the *P. vulgare* being most common on the Carn, but occurring also along the tops of the hedgewalls where it was noticeably very stunted. The day ended with the find of *P.* x *mantoniae* on a roadside wall near Rosemergy (10/419363) where both parents were growing together. The identification of this hybrid was later confirmed.

Mount Field, near Penhale Sands, West Cornwall – 24 May

The locality for the second meeting was Mount Field (10/7856 & 10/7857). Sited at the edge of Penhale Sands, this field contains a number of dune hollows and low fixed dunes as well as marshes. Though *Ophioglossum vulgatum* was not refound (this had been the

major aim of the visit) it proved to be a lively and interesting day. Chris Page was able to be with us in the morning and as a result we were fortunate enough to see not only three species of horsetail, *Equisetum arvense*, *E. fluviatile* and *E. palustre*, but also three hybrids, *E.* x *dycei*, *E.* x *litorale* and *E.* x *rothmaleri*, the first and third of these being recorded for the first time in West Cornwall. It was also interesting to learn that the presence of flag iris (*Iris pseudacorus*) was a good indicator for both *E. fluviatile* and *E. palustre* (we were in a marsh of varying degrees of wetness at the southern end of the field!).

Rain drove us into a friendly pub at midday, giving us the opportunity to look at photographs taken by one of the group when he visited Crete. Two of these were of *Anogramma leptophylla* and *Asplenium onopteris*. The latter was of the greatest interest as it had once been thought to occur in Cornwall, but mistakenly so.

Dozmary Pool, Bodmin Moor, East Cornwall – 7 June

Originally a further visit to Rough Tor had been planned for this day as there had been a recent report of more *Huperzia selago* on its northern slopes, but at the last minute it was decided to visit both Dozmary Pool, the main site in Cornwall for *Isoetes echinospora*, and Colliford Lake. A small group met at the Jamaica Inn at Bolventor ready to drive towards Dozmary Farm (20/194746). In the shallow water at the edge of the pool, near the farm, spring quillwort was abundant and the young plants were so congested in some areas that they formed a veritable carpet. During the walk around the pool still more plants were seen, many this time in deeper water. *Oreopteris limbosperma* was also recorded, growing by the stream that flows out of Dozmary into Colliford Lake (20/194741).

On the way back to Bolventor we followed the road past Higher St Lukes (20/189759) where a stop was made by a hedgebank that was particularly fern-rich. Here, in the roadside ditches, *Athyrium filix-femina*, *Dryopteris dilatata* and *D. affinis* were locally frequent. One of these *D. affinis* plants appeared so distinct that it was hoped that it would prove to be subsp. *cambrensis* (20/189758), a fern that is very rare in Cornwall. Along these hedges both *Blechnum spicant* and *Polypodium vulgare* were also abundant growing with bilberry (*Vaccinium myrtillus*), *B. spicant* proving to be the most frequent fern on all kinds of banks and hedgewalls in the vicinity of Dozmary Pool.

After a picnic lunch we drove down the rough lane to Meadows Downs (20/179737), hoping to find *Botrychium lunaria* which was last recorded in fields near the edge of Colliford Lake (20/181725) in 1987. The habitat was very changed, however, with much coarse grassland and though a thorough search was made, the moonwort could not be found. However, *Asplenium trichomanes* subsp. *quadrivalens* was to be seen in abundance on the mortared walls around Meadows Farmhouse (20/179737), more *Oreopteris limbosperma* was found further south on the 'Moonwort peninsula', and at Deweymeads, at the northern end of Colliford Lake, *Asplenium adiantum-nigrum* and *A. scolopendrium* were seen on ruins left after the flooding of Redhill Marsh and some farmland during the creation of the Lake.

St Clement Wood, north of Truro, West Cornwall – 1 August

Though a large part of St Clement Wood is now under conifers, it seemed an interesting site to visit as the wood is considered to be ancient and two of the areas, Lady's Wood and Bishop's Wood are separated by a track that could well be mediaeval in origin. In addition, within Bishop's Wood there is an old circular fort whose banks support an abundance of *Dryopteris aemula* (10/829487).

Fourteen of us met in the forestry car park (10/820477), the leader for the day being a new member, Matt Stribley. A short walk led us to the start of the mediaeval track (10/826480),

a rather wet and stony uphill pathway bordered by Cornish hedges. Most of the ferns here were those that are typical of woodland: *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris dilatata* and *D. filix-mas*, but at the base of the track there were some fine plants of *D. affinis* subsp. *affinis* (10/827481) and halfway along it, where the hedges become very high and shaded, there was more *D. aemula* (10/826481) growing with *Blechnum spicant*, many bryophytes and such flowering plants as hairy wood-rush (*Luzula pilosa*) and wood sorrel (*Oxalis acetosella*). Returning to the main streamside path we continued north until the valley widened into a marsh with much *Dryopteris carthusiana*, *D. dilatata* and splendid *Osmunda regalis*. Here we found one plant of *Dryopteris* x *deweveri* (10/829482) which was just the third record for Cornwall.

Before lunch, which was had on a sloping bank by the stream, there was one more plant to see. This was *Hymenophyllum tunbrigense*, not recorded here since 1867! It was growing over a rocky, cliff-like bank above the main path (10/832486) where the substrate was flushed with streams of water. The colony was very small but all were delighted to scramble up the rough slope in order to see this fern in only its third extant locality in West Cornwall. Though rain had threatened from time to time, the weather remained fine and we were able to explore still further, adding *Dryopteris affinis* subsp. *borreri* (10/831488), *Polystichum setiferum* and *Pteridium aquilinum* to the ferns seen, together with *Polypodium interjectum* on the branches of various oaks, and *Asplenium adiantum-nigrum* and *A. scolopendrium* on the mortared walls of a ruinous building.

Higher St Lukes, near Bolventor, East Cornwall – 29 August

Four of us revisited this area to search again for the *Dryopteris* that had looked so distinctive earlier in the year. We found one plant, growing in a roadside ditch south of Higher St Lukes (20/189758). It was mature enough to show all the characters that enabled it to be verified as *D. affinis* subsp. *cambrensis*, and though further ferns were looked at, none of the others proved conclusive. The opportunity was taken to work along another road in the hope of finding more of the narrow scaly male-fern, but only *D. affinis* subspp. *affinis* and *borreri* were seen. Near St Luke's Chapel (20/195763) along this road, however, the moorland hedges were thick with bryophytes and lichens and such ferns as *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris dilatata* and *D. filix-mas*, with an abundance of *Polypodium vulgare*. *P. interjectum* was rare and was found only on the mortared walls of bridges, as that over the River Fowey at Ninestones (20/213733). One interesting patch of polypody was seen between these two localities and it proved to be the hybrid, *P.* x *mantoniae*, new to this part of Bodmin Moor.

Fairy Cross, Lostwithiel, East Cornwall – 3 October

This was a new venture, a meeting held at the home of one of our members, Caroline Thomas, to discuss various aspects of growing ferns. It proved to be a most enjoyable and instructive day, dealing with the cultivation of ferns, the collection of spores, preparation of the sowing media, the sowing of the spores and the subsequent care of sporelings and developing plants. Further care, pests and problems were also covered and though the group was small, all present added to the success of the day by their queries, recounting experiences and contributing other information. As a result, many felt encouraged to try their hand at growing ferns from spores.

After lunch, enlivened by a tasting of a present from America, canned fiddleheads, variously pronounced as crisp, vinegary and/or tasting of bracken(!), we walked around Caroline's garden enjoying the wealth of both native and foreign hardy fern species and varieties. Some of her ferns have to be grown indoors and these included *Asplenium bulbiferum*, some *Pteris* species and cultivars, and various *Cheilanthes*.

Very many thanks are extended to Caroline for sharing her home with us and also her expertise.

It is again hoped to end the year with an indoor meeting in December at the Cornwall Wildlife Trust at Allet near Truro.

SCOTLAND

Heather McHaffie

Glasgow – 8 July

In July we went to see Alastair Wardlaw's garden and were joined by some members of the Hamilton Natural History Society. We spent the morning enjoying the wide diversity of native and hardy foreign ferns, as well as Jackie's coffee and cheese scones. It started to rain heavily by lunch time so we went back indoors. In the afternoon we visited Glasgow Botanic Garden and saw the famous filmy fern house. By special arrangement we were allowed to walk among the tree-ferns in the Kibble Palace glasshouse, which were very dense and of some antiquity.

Island of Bute, Argyll – 24-27 August

In August we joined the North West Group on Bute, where James Merryweather took us to some very varied sites. Our first stop, of course, was the Fernery at Ascog where the plants provoked much discussion which was only stopped by the invitation to coffee. We also visited a cave with *Trichomanes* gametophytes and a spectacular bank of *Dryopteris aemula*. Most of the Scottish group stayed on over the weekend and we went to see the fernery again. We also walked around part of the south end of the island past an extensive area of *Equisetum* x *dycei*, *Selaginella selaginoides* and occasionally abundant *Asplenium marinum*. We were extremely fortunate with the weather and those of us from the east coast enjoyed the mild climate and more western species of ferns.

GROUP OF EUROPEAN PTERIDOLOGISTS (GEP) EXCURSION

Picos de Europa, North-East Spain – 4–9 August

Patrick Acock

Ronnie Viane, co-ordinator of the GEP, led the group on a repeat of the 1992 BPS excursion to this beautiful part of Spain with a climate similar to Scotland, albeit a little warmer. We came from all over Western Europe this year, with a nice blend of regular members and one or two newer faces including some younger members.

On the first day we journeyed to the Rio Zardon valley where in a steep sided gully we saw *Stegnogramma pozoi*, *Dryopteris aemula*, *Polystichum setiferum*, *Asplenium adiantum-nigrum* and the reason for our visit, *Culcita macrocarpa*, a relic of the Tertiary Laurisilva. After a beach lunch we proceeded to the type site for *Dryopteris corleyi* and its hybrid with *D. affinis*, *D.* x *asturiensis*.

Next day we visited the Mirador del Fito with its splendid views of the Picos. We were looking for *Dryopteris guanchica* but the only strong candidate was close to the car park. Paul Ripley, however, did find large quantities of *D. aemula*. After lunch at a local Sidreria with cider and blue cheese, a speciality of the region, we proceeded to a wooded valley close to Gobiendes where the main interest was *Stegnogramma pozoi*, *Woodwardia radicans*, *Hymenophyllum tunbrigense* and *Trichomanes speciosum*.

Monday was spent in limestone country between Lago Enol and Lago de la Ercina. An easy morning on scree slopes (*Gymnocarpium robertianum*, *Asplenium viride* and *Dryopteris submontana*) gave way to a stiff climb to much larger scree slopes where all three British polystichums could be seen along with the hybrids *P.* x *illyricum* and *P.* x *lonchitiforme*.

On Tuesday, after a long drive to Soto de Sajambre in the Rio Sella Valley, we had another rather long climb, but were finally rewarded by finding *Athyrium distentifolium*. That evening we had a fine farewell dinner.

On the last day the British trio were joined only by Andreas Sarazin who took us to a valley south of Cangas de Onis to see another plant of *Dryopteris* x *asturiensis*, a magnificent specimen. We at last had our gentle day, gradually working our way up the valley noting many of the ferns that we had seen earlier on the tour. In a steep sided gorge we were rewarded for our persistence by finding a new site for *Culcita macrocarpa*.

The 2001 Excursion will probably be to southern France at Whitsuntide. If you would like details of the GEP please contact Dr R. Viane, Dept. of Morphology, Systematics and Ecology, Section: Pteridology, K.L. Ledeganckstr. 35, B-9000 Belgium.
E-mail: ronnie.viane@rug.ac.be; Tel & Fax: +32-9-2645057.

HORTICULTURAL SHOWS

BBC GARDENERS' WORLD LIVE! – 14-18 June

A.R. Busby

It was very encouraging to arrive at our allotted space at the NEC, Birmingham and find that the staging was already prepared, enabling me to make an immediate start on furnishing the stand. I used a mixture of British fern varieties and foreign hardy ferns. Compared to other societies' stands, I feel that ours lacks that certain punch that would both inform the public and encourage interest. With the BPS Committee's agreement, I hope to prepare some suitable colourful posters for next year's show.

The move to new Halls, announced in last year's report, seems to have been a move for the better from our point of view. The show is more compact and now enables visitors to circulate more easily. The previous layout tended to put the nurseries in a cul-de-sac which formed an annoying bottleneck. Another improvement is that the Halls are on the periphery of the NEC with a back road which gives access for exhibitors' vehicles to the Halls without coming into conflict with the departing public. Another welcome innovation is that for the first hour of break-up only private cars are allowed in. This means that the amateur exhibitors can quickly load and get away before lorries start to fill the Halls.

We still need more assistance with manning the stand. I cannot be there for the Wednesday, Thursday or Friday. Thankfully, local members come to my aid but I do feel that it is unfair for the burden to fall on the same few every year. The NEC is well served by public transport and an extra few pairs of hands would be very welcome.

My sincere thanks to Sue Pierce-Seary, Jeff Whysall, Alan Ogden, John and Margaret Collins and Maurice Green for giving their time to man the stand.

SOUTHPORT FLOWER SHOW – 17-19 August

A.R. Busby

I arrived on Wednesday afternoon to find Victoria Park rather soggy which is not a good omen at Southport Show. By Thursday morning things had dried out somewhat and the weather proved to be mainly sunny. The only hiccup was rain over Thursday night which, largely due to compaction of the soil by Thursday's visitors, produced small lakes and a minor canal in the exhibition tent on Friday morning.

Lawrence Kirkham arrived with a smart garden urn sporting a superb plant of *Polystichum setiferum* 'Plumoso-divisilobum' and a large *Rhododendron* stump planted up with various hardy ferns. Together with some 20 vases of cut fronds, these created a very attractive stand which solicited much favourable comment from passing visitors.

A notable event took place on Friday morning, when Brian Robinson introduced himself as the son of Norman Robinson, a much respected member of our Society who died in 1976 (see *Bulletin* 1(4):179 & 5(3):137). Mr Robinson had called in with a few old fern books to ask if we could find a good home for them. This we have done with grateful thanks.

The standard of the exhibits was very good which was to be expected after such a cool, wet spring and a relatively cool summer. However, I was dismayed to see that a few classes had only one exhibitor and that there were no entries for class 7. None-the-less it was gratifying to see that presentation continues to be of a high standard; all the exhibits were of show bench standard but for me the best fern in the show was Lawrence Kirkham's *Adiantum capillus-veneris* 'Cornubiense'.

The judge was A.R. Busby. The prize winners are listed below.

Class 6 Individual Championship: Four hardy, two greenhouse and two foreign hardy ferns: 1st Mr & Mrs B. Russ, 2nd Mr I. Rawson (2 entries)
Class 7 Three Hardy British Ferns (dissimilar): (no entries)
Class 8 Three Hardy Foreign Ferns: 1st L. Kirkham, 2nd I. Rawson (2 entries)
Class 9 Three *Polypodium* (distinct varieties): 1st L. Kirkham (1 entry)
Class 10 Three *Polystichum* (distinct varieties): 1st L. Kirkham (1 entry)
Class 11 Three *Athyrium*: 1st L. Kirkham (1 entry)
Class 12 Three *Asplenium* (excluding *A. scolopendrium*): 1st L. Kirkham (1 entry)
Class 13 One British Fern (any kind or variety): 1st L. Kirkham, 2nd I. Rawson, 3rd Mrs E.A. Gibbs (3 entries)
Class 14 One Greenhouse Fern: 1st L. Kirkham, 2nd Mrs E.A. Gibbs, 3rd I. Rawson (3 entries)
Class 15 Three *Asplenium scolopendrium* (3 distinct varieties): 1st L. Kirkham (1 entry)

Lawrence and I would like to express our thanks to the following members who took the trouble to make long journeys to see the show and spend a few minutes chatting to us on the stand: L. Dugdale, C. Mullins, I. Gray, B. Russ and I. Unsworth.

My thanks to Lawrence Kirkham for organising the Society stand and for providing such interesting items to improved the attractiveness of the stand this year, and to Libby Gibbs for her enthusiastic support.

The dates for next year's show are 16-18 August and we look forward to seeing you there. We are always short of help on the stand so if any members have just a few hours to spare I would be very pleased to accept offers of help.

THE AMERICAN FERN SOCIETY

The AFS invites all readers of this *Bulletin* to join the American Fern Society. Regular members receive the *Fiddlehead Forum* five times a year. This newsletter is published for the benefit of those who are interested in growing ferns, hunting for them, and expanding their knowledge of ferns. Journal members also receive the scientific quarterly *American Fern Journal*. Membership costs $11 and $22 per annum respectively for members residing outside USA, Canada or Mexico, including postage for airmail-assisted delivery. For particulars please write to Dr David B. Lellinger, 326 West St. NW, Vienna, VA 22180-4151, USA. Prospective members residing in Great Britain should write to Mr M.S. Porter, 5 West Avenue, Wigton, Cumbria CA7 9LG.

AFS SUBSCRIPTION PAYMENTS: Our societies have an exchange arrangement whereby members of the BPS can pay their AFS subscription through the BPS Membership Secretary and *vice versa*. Contact your Membership Secretary for details.

SECRETARIAL NOTES

ANNUAL GENERAL MEETING 2001 – The 98th AGM will take place on Saturday 3rd March 2001 in the Gilmour Building, Cambridge Botanic Garden at 2.00 p.m.

COMMITTEE VACANCIES – In accordance with paragraph 3, section 3 of the Society's Constitution, two vacancies will occur due to the retirement of the two longest serving Committee members. In addition, there are four unfilled vacancies. Nominations are invited from Society members to fill these vacancies at the Annual General Meeting in 2001. The names of the nominees, proposers and seconders, together with a letter from the nominee indicating his/her willingness to serve, should reach the General Secretary by 10th February 2001 at the latest.

SUBSCRIPTIONS 2001 – Members are reminded that subscriptions for 2001 are due on 1st January 2001 and should be paid to the Membership Secretary, Mr M.S. Porter, 5 West Avenue, Wigton, Cumbria CA7 9LG. Cheques should be made payable to 'The British Pteridological Society'. Current rates are given inside the front cover of this issue. Payment can be made by **Credit Card** – see renewal form. **Standing Order** forms are printed on the reverse of renewal forms and are also available from the Membership Secretary and the BPS web site. Standing Orders may be paid on 1st January or 1st February. In either case, membership is deemed to be from 1st January to 31st December.

PUBLICATIONS BY AIRMAIL – Our journals can be sent by airmail to overseas members, provided that they advise the Membership Secretary and pay an additional subscription to cover airmail postage. See inside front cover for rates.

FUTURE PLANS FOR BPS DISCLAIMER – All members attending Society meetings should be aware of the Society's new *Safety Code* (see p. 275), as well as the *Code of Conduct for the Conservation and Enjoyment of Wild Plants* (see 1999 *Bulletin* 5(4):199), and will in the future be required to sign a Disclaimer form (currently being designed).

GREENFIELD FUND – This fund, set up as a memorial to one of our Society's great fern growers, Percy Greenfield, is used to finance approved research projects, helping with the cost of necessary equipment, books and travel expenses. Percy Greenfield's interest leaned very much towards the non-scientific side of our activities and it is felt that he would want this taken into consideration when decisions are made. Workers eligible for university or college grants and similar support are not therefore eligible for help from the fund. Anyone wishing to avail themselves of this fund should contact the General Secretary for further information.

CENTENARY FUND – This fund is used to promote the study of all aspects of pteridophytes – horticultural, scientific and educational, whether by amateurs, students or professional pteridologists. As such its scope is much broader and more flexible than the Greenfield Fund. Anyone wishing to avail themselves of this fund should contact the General Secretary for further information.

SPECIAL INTEREST GROUPS – There are three Special Interest Groups. For further information please send a stamped addressed envelope to the organisers:

Tree-ferns: Prof. A.C. Wardlaw, 92 Drymen Road, Bearsden, Glasgow G61 2SY.
Foreign Hardy Ferns: A.R. (Matt) Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.
Filmy Ferns: S.J. Munyard, 234 Harold Road, Hastings, East Sussex TN35 5NG.

MEMBERS INFORMATION SERVICE – Members often require information and advice on many aspects of pteridophytes but are reluctant to ask or simply do not know where to obtain help. Queries from members on any aspects of the biology, identification or

cultivation of ferns or fern allies should be sent, with three first class stamps, to A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.

READING CIRCLE – The Society operates a reading circle for the *American Fern Journal*, a quarterly publication containing much information for those seriously interested in ferns. The *Fiddlehead Forum*, which publishes many 'ferny' items of interest to the amateur grower, accompanies it. To receive these journals contact A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.

FOREIGN FERN SOCIETY JOURNALS HELD BY THE SOCIETY – The Society exchanges journals with many other fern societies in the world. We have a collection of journals/newsletters from societies in the United States (3), Australia (5), New Zealand, India, Switzerland and the Netherlands. If members would like to browse these, they are welcome to get in touch with the back numbers organiser for a list of our holdings. The journals can then be borrowed for just the cost of postage both ways.

BACK NUMBERS OF JOURNALS – This year the Botanical Society of the British Isles parted with the back issues of its journals for just the cost of postage because very few members had availed themselves of them over the last thirty years. We do sell about £100 worth of our old journals each year and if we had complete runs we could probably sell one or two of these a year. The prices are kept reasonably low under the philosophy that they are better kept in the hands of the membership than in the loft of the back numbers organiser! They are full of interesting data for the various interests of members. I am certain you would find something of interest to you. I have just taken a back run of our sister organisation's *American Fern Journal* and have been fascinated with both the history of the American Fern Society, especially the people and their love of ferns, and the gradual advancement of ideas this century. I cannot wait to fill in the gaps in my collection. I hope our journals do not await the fate of the BSBI's of being recycled. Take a sample pack for just £5 or send for a list of back numbers from Patrick Acock, 13 Star Lane, St Mary Cray, Kent BR5 3LJ. *P.J.A.*

WORLD-WIDE WEB SITE – The URL (address) of the BPS Web site hosted by The Natural History Museum is 'http://www.eBPS.org.uk'. The content is regularly updated. See also article by our webmaster entitled 'eBPS' on p. 276.

E-MAIL ADDRESSES – We plan to include e-mail adresses on the next BPS membership address list. If you are on e-mail and are willing to have your address published, please send it to the Membership Secretary at: Membership@eBPS.org.uk.

BPS VIDEO 'BRITISH FERNS' – This twenty-five minute video shows most of the native British ferns growing in their natural habitats. It demonstrates the wide variety of size and form to be found in British ferns and the broad range of habitats they colonise. Attention is drawn to key identification characters for each species.
Schering Agriculture and the National Museum of Wales funded the video. It is available for loan to members and interested organisations for £3, to cover handling costs (UK only). For further details write to the General Secretary enclosing a stamped addressed envelope.

ROYAL HORTICULTURAL SOCIETY – Our Society is affiliated to the RHS, enabling a limited number of members to enjoy certain privileges in connection with RHS Shows, competitions and services.

BRITISH WILDLIFE – Concessionary individual subscriptions to *British Wildlife* magazine are available to BPS members.

PAYMENT OF EXPENSES – Documents setting out the *Rules of Conduct for the Treasurer* (BPS/T/1), the *Rules for Seeking Re-imbursement of Personal Travelling and*

Administrative Expenses by officers and members acting on behalf of the Society (BPS/T/2), and the *Authorities for Payment* (BPS/T/3) can be obtained from the Honorary Treasurer on request.

COPYRIGHT – All contributors to the BPS journals and webpage are now required to sign an agreement assigning ownership of copyright of the article, photograph etc. to the BPS. The adoption of this practice brings the BPS into line with other similar societies and has the aim of ensuring maximum international protection against infringement of copyright. In other words, it safeguards the contributors' work from unlawful copying and use. This is especially important with the increase in information disseminated electronically. It does not stop contributors from using their own work elsewhere provided that they acknowledge the original source of publication.

MERCHANDISE – Do you have a BPS sweatshirt and/or tee-shirt, or one of the new polo shirts? These are all dark green with a small BPS logo in yellow. Ties, metal badges, bookmarks and car stickers sporting our logo are also available. Other items for sale: greetings cards, postcards and notelets. Can't find your order form? Contact Mrs L.I. Craddock, 40 Russell Drive, Ampthill, Beds. MK45 2TX for details. Linda would also welcome suggestions for new stock.

HELP FOR NEW MEMBERS – A leaflet is being prepared, principally for new members but probably of interest to some other members, explaining how help, advice and information can be obtained for different areas of pteridological interest. It is also intended to maintain a list of members who are willing to offer theoretical and practical help and guidance in one or more areas, such as growing ferns, identifying pteridophytes and the biology of pteridophytes, or who are prepared to take individual members and overseas visitors into the field to see pteridophytes in their local area. If you think you would like to be included, please contact the General Secretary.

WANTED: ARCHIVIST – The Society urgently requires an archivist to actively maintain and enhance its collection of various archive materials, mainly photos, letters and a few sundry items. Further information is available from the General Secretary.

WANTED; HELP WITH PUBLICATIONS – We need a technical editor to facilitate the flow of electronic information through the Societys' newsletters, journals and the web site, e.g. to convert newsletter format to web format, help with journal layout and production etc. Assistance is also needed with the preparation of our ocasional Specail Publications and leaflets. This all involves a wide range of publishing, editing and design skills. Or do you have an aye for detail or are familiar with MS WORD? IF So, we would like you're help. If you think that you could help the Society in any of these ways (if you've found ten of the twelve mistakes in this paragraph you definatelycan help), please contact the Chairman of the Publications Subcommittee, Miss Josephine Camus, Botany Department, The Natural History Museum, Cromwell Road, London SW7 5BD, teL. 020-7942-5587, e-mail: Publications@eBPS.org.uk.

ASSISTANCE REQUIRED ON BPS STANDS AT FLOWER SHOWS – The Society needs volunteers to assist at the BBC Gardeners' World Live! and Southport Flower Show. You do not need to be an expert on ferns or fern growing, just prepared to spend a few hours or a day on the stand. Expenses are available and should be negotiated with A.R. Busby in the first instance. Further information is available from A.R. (Matt) Busby at 16 Kirby Corner Road, Canley, Coventry CV4 8GD.

ANNUAL GENERAL MEETING 2000

MINUTES of the 97th Annual General Meeting held at the Chelsea Physic Garden. London on Saturday 25th March 2000 at 14.00 hours.

IN THE CHAIR: The President, Mr M.H. Rickard.

PRESENT: Mr R.G. Ackers, Mr P.J. Acock, Mr M. Amoy, Mr S.M. Andrews, Miss A. Beaufoy, Mr C. Brotherton, Mr A.R. Busby, Miss J.M. Camus, Mr M.J. & Mrs L.I. Craddock, Mr A.J. Dickman, Mr G. Downey, Dr M. Gibby, Mr G.K. Hoare, Miss J.M. Ide, Mrs J. Keyes, Mr A. Leonard, Mrs S. Lewis, Dr S.D. Martinelli, Miss C. Mullins, Mr S. & Mrs K. Munyard, Mr A.H. Ogden, Mr B. O'Shea, Miss A.M. Paul, Mr M.S. Porter, Mr T. Pyner, Mr P.H. Ripley, Dr F.J. Rumsey, Dr C. Sanchez, Dr M. Shaffer-Fehre, Mr B.R. Stevenson, Mr F.A. Strang, Mr T. Taylor, Mr P. Temple, Mr A. & Mrs M. Urquhart, Dr T.G. Walker, Mr R.M. Walls, Prof. A.C. Wardlaw, Mr G.H. Winder, Mr J.R. Woodhams, Mrs J. Yesilyurt.

Item 1 – APOLOGIES FOR ABSENCE: Wg Cdr E.J. & Mrs R. Baker, Mr R.J. Cooke, Mr J.A. Crabbe, Mr J. & Mrs M. Garstang, Dr N.J. Hards, Mr L. Kirkham, Miss R.J. Murphy, Mrs M.E. Nimmo-Smith, Mr A.C. & Mrs M. Pigott, Mr R.J. & Mrs B. Smith, Prof. B.A. Thomas, Mr R.N. Timm, Mr B. & Mrs A. Wright.

Item 2 – APPROVAL OF MINUTES: Minutes of the 96th Annual General Meeting held on 20th March 1999, published in the 1999 *Bulletin* (Volume 5, no. 4), were approved. (Note: The Minutes published in the *Bulletin* and approved at the meeting were a slightly shortened version of the Minutes as recorded in the Minute Book.)

Item 3 – MATTERS ARISING: None.

Item 4 – REPORT OF THE HONORARY GENERAL SECRETARY:

A society that celebrates a group of plants which has been around for some 200 million years and had its origin some 400 million years ago obviously has some trouble marking a mere 2,000 years on the human calendar. But our Society was having a go! This year, some members had already been to the other end of the world – and, despite the very obvious attractions, had come back! Last year saw nothing so exotic, but a band of stalwarts continued to support the Society's diversity of activities, promoted the Society to the outside world, gaining a few converts as they did so, and embellished a royal residence. The Committee continued to work in the background, with very full agendas for its meetings as it continued to look at various aspects of the Society's work.

APPLICATION FOR CHARITY STATUS: The attaining of Charity status continued to exercise the Committee greatly. Although the procedure seems straightforward enough, the Committee had found that there was extensive detail which needed to be considered very carefully, and consequently an application had not yet been made. As a result of the Committee's discussions a number of questions on the meaning and implications of some of the articles of association of a charitable company and the responsibilities of charity trustees had been directed to I.C.C. Legal & Commercial Services, Cardiff, for advice and their reply was awaited.

CHANGES TO THE CONSTITUTION: Certain changes to the Society's Constitution had been found to be appropriate, partly in view of the preparation for application for Charity status. The Committee was asking the Membership at this AGM to approve these changes. All these matters were to be discussed under Item 12 and the changes are itemised there.

FINANCE: As the result of comments by the auditors, the Committee had looked at the procedures for the authorisation of payments by the Treasurer. *Rules of Conduct for the*

Treasurer of the British Pteridological Society (BPS/T/1), had been agreed. Similarly, *Rules for Seeking Re-imbursement of Personal Travelling and Administrative Expenses* (BPS/T/2) had been prepared and would be given to all new officers, committee members, appointees and others on official Society business. Both documents were available from the General Secretary.

READING CIRCLE: Of the journals and newsletters received by the Society, only the *American Fern Journal* and accompanying *Fiddlehead Forum*, and the *Indian Fern Journal* were considered to be worth circulating. A.R. Busby had agreed to continue initiating the circulation of the first two items. As postage for the *Indian Fern Journal* would be considerable, it would not be circulated automatically, but specific issues could be requested. Other publications and newsletters received by the Society could be borrowed on request.

ANNUAL FERN SHOW: The Committee had discovered that A.R. (Matt) Busby had personally carried the cost of the prizes and any shortfall in the running costs of the annual Fern Show at Warwick University. This was felt to be untenable and the Committee agreed that the Treasurer should annually make available up to £100 for prize money. This would also allow the inclusion of extra classes to attract the novice and non-fern-growing fern enthusiast. Hopefully, this would also increase the popularity of the Show to members.

The presence of the BPS at Flower Shows is very effective in attracting new members. The two shows at which the Society annually had a presence were the Southport Flower Show in August and the BBC Gardeners' World Live! at the NEC Birmingham in June. A.R. Busby also felt that the Malvern Shows were worth Society presence, however, he had found that the distance for him to travel was too great. Members were encouraged to offer to man BPS stands at these shows and also, either individually or as groups, to include stands at local shows in their own area. If members would like to volunteer their services or to know more about what is involved, they should contact A.R. Busby, or L. Kirkham who had kindly taken over the responsibility for the Society's stand at Southport Show.

The Committee wished to thank Matt for all his enthusiasm and hard work in organising and manning the Society's stand at Southport and other shows, and also to thank those members who had helped him over the years.

CENTENARY FUND: The Centenary Fund Trustees had been pleased to make an award of £250 to W.D. Speer to attend the 1999 International Bracken Conference in Manchester.

SCANNING AND PROTECTION OF THE SOCIETY'S FIRST MINUTE BOOK: Aware of the extreme value of the Society's first Minute Book, which covers the period from the founding of the Society in 1891, through to 1983, B. Wright had kindly undertaken the task of scanning the book onto a CD-ROM. This was being done principally for archival purposes, but the Publications Subcommittee was to consider two proposals: firstly, that the CD-ROM be made available for sale to members and, secondly, that extracts from the Minute Book be published on the Internet. The Committee wished to express its thanks to Barry Wright for undertaking this formidable task. The safe depositing of the Minute Book had still to be resolved. Advice received by the Committee was that a deed box or so-called fire-safe-box would not ultimately protect the book from an intense fire.

ARCHIVES: The Committee was currently seeking the advice of a professional archivist about the Society's archives. Although the Committee had yet to find a suitable deposit for the archives, much preparatory work could be done on existing material, such as databasing old correspondence. A volunteer was required to seek, collect and collate newspaper and magazine articles on all subjects of interest to the Society. Anyone wishing to volunteer, or to learn more of the task before deciding to volunteer, should contact the General Secretary.

PATRON: M.H. Rickard, our President, reported that the collection of ferns for HRH The Prince of Wales had been delivered to the Prince's home, Highgrove, and the tree-ferns had been planted under his supervision. The ground ferns were potted up and should have been, or would be shortly, planted out.

SARAJEVO BOTANIC GARDEN APPEAL: The Society responded to an appeal for books and journals for Sarajevo Botanic Garden, which lost its Library during the fighting in Bosnia. There was a pteridologist at the Garden and a set of Gazettes, from Volume 12 to the present, and a full set of Pteridologists had been donated in support of the Garden.

FINALLY, A CALL TO ARMS! If there was one thing that the trip to New Zealand had confirmed, it was that ferny folk are amongst the friendliest and most helpful one could find anywhere in the world. The BPS is no exception, and the General Secretary wished to encourage members to consider repaying some of the friendship and help that they have received, by helping in some way with the Society's activities. The AGM would contain several appeals for help and others either already have or else would appear in the *Bulletin*. There had been some responses to past appeals, for which we are grateful, but more were required to ensure that the Society could provide the services and programme that members desired. Individual members might wish to respond either by undertaking a task or perhaps by sharing a task with another member. Members who felt they could not help the Society directly might be able to encourage an interest in ferns through their local natural history societies, gardening clubs, or school or college activities. One thing was certain, whatever members decide to do, they could be assured of willing advice and encouragement from officers and other members of the Society.

Item 5 – REPORT OF THE HONORARY TREASURER: Mr A. Leonard presented the unaudited accounts for the year ending 31st December 1999. He had no further comments to add to the notes given with the accounts.

The accounts were approved, subject to auditing. Proposed by Dr M. Gibby, and seconded by Dr F.J. Rumsey.

Item 6 – REPORT OF THE MEMBERSHIP SECRETARY: Mr M.S. Porter reported that the membership database had been converted to a new system at a minimal cost of approximately £70. E-mail addresses would be included in the next membership address list, so members would be asked to supply Mike with their addresses.

The sending of reminders to members who failed to pay their subscriptions in good time was both time consuming for the Membership Secretary and expensive for the Society. The Committee had agreed that, from 2000, members paying by Standing Order should be given the option of paying on January 1st *or* February 1st. It was hoped that for some members this would alleviate the problem of having so many subscriptions due at the beginning of the year and would also encourage more members to arrange Standing Orders for the payment of their subscriptions.

Membership stood at 767, an increase of 7 on last year's figures. At the end of 1999 there were 573 'Ordinary' members, 56 Family members, 35 Honorary/Complimentary members, 12 Student members and 90 Subscribers. During 1999, 5 members had died, 19 resigned and 50 lapsed. However, these losses were more than balanced by the encouraging total of 81 new members, who joined often as a result of recommendation by friends or following a visit to a Flower Show where the Society was represented. An appreciable number of members joined after seeing the Society's web site. Of the 19 members who resigned, only one did so on the grounds of dissatisfaction with the Society's programme, all the others were a result of illness, lack of mobility or changes of circumstance or interest. Unfortunately a comparatively large number of members lapsed. (A member was deemed to

have lapsed if membership fees had not been paid for a complete year and no official notification of resignation had been received.) It must be assumed that reasons for lapsing are the same as those for resignations, although inertia might also be a significant element!

A short discussion on possible ways of reducing the number of late payments of subscriptions and reminders, and of reducing lapsed memberships, followed the Membership Secretary's report.

Item 7 – REPORT OF THE CONSERVATION OFFICER (AND RECORDER):

Mr R.J. Cooke reported on:

BIODIVERSITY ACTION PLAN WORK: Introductions of *Woodsia ilvensis*, co-ordinated by the Royal Botanic Garden, Edinburgh and funded by English Nature and Scottish Natural Heritage, had proceeded according to plan, and the wet summer of last year helped with the initial establishment of sporelings. Further re-introduction work was planned for two sites during 2000.

Work, co-ordinated by Plantlife, had also begun on identifying the locations of all pillwort and marsh clubmoss sites in England. Further work would concentrate on identifying suitable management of their preferred habitats, usually of heathland in the lowlands. Curiously, most of the scarce wildlife found on heathland was dependent upon bare ground; in the case of pillwort and marsh clubmoss, they both preferred open damp ground which was free from competition from other more vigorous species.

NEW LEGISLATION: It would be of interest to members that a new Bill, The Countryside and Rights of Way Bill, was passing through Parliament. If enacted, this would give significantly stronger protection to SSSIs and rare species.

CODE OF CONDUCT: This was published last year by BSBI, with input from the BPS, and a summary was published in last year's *Bulletin*. This Code outlined what the botanical conservation societies believed to be reasonable and responsible practice for the members, and pointed out the legal framework within which we must all act. Members were strongly encouraged to read and adhere to this code whenever they were in the field.

BETTER CO-ORDINATION: A three-year post was soon to be recruited, working in The Natural History Museum and funded by English Nature. This post would improve co-ordination between the British Pteridological, Bryological, Phycological and Lichen Societies and Plantlife, English Nature and The Natural History Museum, to ensure that the tremendous volunteer effort which these societies could muster was targeted most effectively, for example in surveys for specific species, or surveys in particular parts of the country. This should ensure that the vast number of records collected will find their way into the various recording schemes, and that feedback from the schemes will be made more readily available to the members of the societies.

Item 8 – SUBCOMMITTEE (Permanent) REPORTS:

8.1 – MEETINGS SUBCOMMITTEE: The Meetings Secretary, Mr P.J. Acock, reported that the meetings in 1999 had met with a mixed response as regards numbers although only favourable reports had been received with regard to content. The Spring Indoor Meeting and AGM at Reading were well attended and enjoyed. The Kew meeting, usually the best attended meeting of the year, drew far fewer members than normal despite the opportunities to visit unusual places. The field meeting to Priddy in Somerset was fairly well attended and all enjoyed the range of habitats the leaders had chosen. Saville Gardens in Windsor Great Park drew a range of people from far and wide to view many beautiful plants in a woodland setting. The annual fern show had been poorly attended and this was disappointing for Matt Busby, the organiser, who had persevered to provide an enjoyable

day at a centrally located venue. It must have been disappointing also for Harry and Sue Olsen who had travelled all morning in order to give a preview of the fern excursion to be based in Seattle during 2003. On the Isle of Man there were only four participants. thankfully boosted with a few enthusiastic islanders. Wensleydale had been very well attended and Barry Wright was to be thanked for his excellent preparation of both the field trips and the evening microscopy sessions. The last indoor meeting saw the Natural History Museum staff put on an excellent day. Members who came did not want to leave. however. numbers were again disappointing at 18.

The Secretary thanked the Subcommittee and all those people who had led meetings throughout 1999. Their commitment to the Society was appreciated. It was mainly through their efforts that the Society maintained and would preserve a lasting interest in ferns.

Although all societies need their armchair members and are grateful for their support in other ways, it was disappointing to the Meetings Subcommittee and to the benevolent people they chose to lead meetings, when there was a dearth of interest. Huge numbers might present logistical problems but a few more members attending day events would certainly be encouraging. Members were invited to hear this plea.

8.2 – PUBLICATIONS SUBCOMMITTEE: Miss J.M. Camus, the Acting Chairman, reported that the Publications Subcommittee had met once since the last AGM.

Two members had attended a one-day meeting in October entitled 'Advice to Publishers and Editors', which had provided a lot of useful information and contacts.

JOURNALS AND WEB PAGE: The Society's journals and web page would be covered in the reports from the individual editors. However, three general matters needed to be brought to the Society's attention:

1. The need for a copyright agreement between the Society and contributors to all publications (hard copy and electronic). Legal advice was being sought on this.

2. The need for all publications to be produced by up-to-date technology with archive copies kept at least on diskette and preferably on CD. A technical/desk top editor needed to be recruited.

3. Indexing. The Society had been very fortunate that three people had volunteered – one for each journal. Indexing was a very complex task and the Subcommittee had recommended a meeting for all concerned with a presentation from a suitable person from the Society of Indexers.

SPECIAL PUBLICATIONS: It had been ten years since the issue of the last Special Publication. The Subcommittee had resolved that a publication every two years should be aimed for, but more volunteers – a managing editor, volume editors, proof readers and authors – were desperately needed. If members thought they could help, they should contact Miss J.M. Camus. [Department of Botany, The Natural History Museum, Cromwell Road, London SW7 5BD; tel.: 020 7942 5587, e-mail: Publications@eBPS.org.uk]

Hall and Rickard's bibliography of pre-1900 fern books should be published this year. Progress had been set in train towards the publication of Dyce's work on *Polystichum* varieties in a few year's time.

8.2.1 – *BULLETIN*: The Editor, Miss A.M. Paul, reported that for the first time for many years the *Bulletin* had been published on schedule. She thanked all who had assisted in achieving this by sending in their reports and photographs in good time.

The first report for the 2000 *Bulletin* had been received and it was hoped that other contributors would produce their reports as promptly. Alison reminded members that, as

always, photographs taken during meetings would be appreciated. There was the possibility of additional photographs being put up on the Society's web site, thus even more photographs from members would be welcome.

8.2.2 – *THE FERN GAZETTE:* On behalf of both Editors, Miss J.M. Camus reported that two issues of *The Fern Gazette*, parts seven and eight of Volume 15, comprising six papers and five book reviews, were published in 1999.

The Editors were very grateful to the Computer Graphics Department of The Natural History Museum for assistance in streamlining the production of this journal, which had resulted in considerable saving of both the Editors' time and the Society's money.

The Society was very fortunate to have been offered help by Dr Dave Flanagan, Harrogate, who was compiling the index to Volume 15. This should be ready to be mailed with the second issue of *The Fern Gazette* in 2000.

Seven manuscripts were currently in various stages of the refereeing/editorial process for publication. One of these was the direct result of information displayed on the Society's web page. The start of a new volume brought the opportunity for making various changes to the style of *The Fern Gazette*, some of which had been discussed at the last AGM. Hazel Sims, a professional graphic designer, had produced a new cover design to project the journal's image as a serious and quality scientific publication.

It had been discovered that *The Fern Gazette* was not covered by a major indexing and abstracting organisation called The Institute for Scientific Information Inc. (ISI) available on-line through BIDS (Bath Information and Data Services). ISI had asked for a trial free subscription of *The Fern Gazette* for four issues. The Committee had agreed to this.

8.2.3 – *PTERIDOLOGIST:* No report had been received.

8.2.4 – WORLD WIDE WEB SITE: The Editor, Mr A.C. Pigott, reported that the web site had been further developed this year with additions including extracts from the Society's papers of 1899 and 1900, more *Fern Gazette* abstracts, more information on the Society itself, membership forms and a 'What's New?' page. A number of technical improvements had been made including the ability of visitors to be e-mailed when the site changed, and the collection of site visit statistics. The site currently received an average of 18 visits a day – this was without any serious attempt to raise its profile with the various Internet search engines.

A professional website editing and management suite, *GoLive 4.0* by Adobe, had been acquired and would enable the publication of new material with improved visual quality, and for it to be done with less effort, which meant that more could be done, and done faster. The editor was still seriously short of good material to use on the web site. Members were encouraged to contact the editor if they thought they might be able to contribute. Essentially, anything which might be suitable for paper publication could be used, especially visual material.

There were plans for some new and exciting additions to the BPS web presence. These could significantly enhance the visibility of the Society and even radically question the way it fulfilled its objectives and dealt with its membership. These ideas were being dealt with under the title eBPS and were being discussed with the Publications Subcommittee.

In addition to the web site, e-mail lists had been set up, which enabled BPS members to readily exchange information about Society matters.

8.3 – FERN VARIETIES NOMENCLATURE SUBCOMMITTEE: The Subcommittee did not meet in 1999.

Item 9 – SUBCOMMITTEE (ad hoc) REPORTS:

9.1 – FERN ATLAS SUBCOMMITTEE: No report had been received.

9.2 – SYMPOSIUM 2001 SUBCOMMITTEE: Mr R.G. Ackers, the Chairman, reported that the core committee of A.C. Jermy, A. Leonard, J.M. Ide and R.G. Ackers had been formed. However, additional assistance would be required over the coming months. Project plans and a budget had been produced, the latter showing a prospective turnover of around £30,000. Some contribution to funding had been sought from English Nature. The first circular had been produced and distributed, and around 150 recipients had responded to request the second circular. The scientific programme was under construction. A BPS field meeting in the Southern Lake District had been scheduled to follow the symposium to enable delegates to attend should they so wish.

Item 10 – COMMITTEE-APPOINTED OFFICERS AND MANAGERS:

10.1 –BOOKSALES: Mr S. Munyard reported that 1999 had been another busy year. He had obtained two private collections, which had totalled nearly 600 titles. This had caused a delay in producing the Booksales list for which he apologised. The possibility of carrying stock of CD-ROM fern titles was being investigated.

10.2 – MERCHANDISE: Mrs L. Craddock reported that sales in 1999 had increased by 15% compared to 1998, so were now going in the right direction. She thanked the Committee for taking on board the possibility of additional items. Polo shirts, tee-shirts, sweat-shirts and bookmarks were now available. It was possible that mugs and other items would follow. Hopefully, renewed interest and enthusiasm would result! The merchandising continued to run smoothly and Linda was prepared to carry on for another year lugging merchandise around the country and sending it around the world!

10.3 – PLANT EXCHANGE: Mr R. and Mrs B. Smith reported that the September 1999 list was better than average, with generous offers of ferns, equisetums and *Selaginella* to interest all tastes. Fifty plus members had applied for a copy of the list. Most grateful thanks were extended to the donors who had contributed admirably and made the scheme successful. Anyone with even three or four plants to spare was encouraged to consider contributing. However, it was not necessary to have ferns to offer in order to participate.

10.4 – SPORE EXCHANGE: Mr B. and Mrs A. Wright reported that the exchange continued to be a popular service, with 154 requests being received and processed. Of these, 44 were from non-UK members, affirming the international nature of the exchange. After the main flush of requests, there had been the anxious wait for fresh stocks to be donated. During the year, the scheme had been fortunate to receive 397 donations (some taxa being duplicated) from 40 donors. Each year there were normally 20-30 new taxa to offer and about the same number were lost from the list.

Each year there were always certain taxa that were in great demand with insufficient donations to fulfil the requests. Any amount of asplenium, *Cheilanthes*, woodsias and tree-ferns were always needed. The Spore Exchange Organisers were keen to encourage members to donate spores. Even if the species might seem common or mundane to the grower or collector, someone elsewhere in the world might be very grateful for it. Also, members were not expected to send in tens of different taxa. If each member sent in one packet this would go a long way to maintaining stocks. However, to be fair, for a donor to receive the full extra allocation of ten packets, it was considered that a minimum of five different taxa should be donated, although, if someone sent in a couple of grams of *Woodsia alpina* spores, this rule might be ignored in gratitude!

10.5 – HORTICULTURAL INFORMATION OFFICER: Mr A.R. Busby reported that some eight requests for information, covering a wide selection of topics on ferns and fern

growing, had been received. About half of the requests for information were from non-members and were addressed to him as Hon. Gen. Secretary. Information required mainly concerned where to obtain hardy ferns, but there had been one long letter asking for information on building a fernery and a phone call on restoring a fernery.

Item 11 – REPORTS FROM SPECIAL INTEREST GROUPS: The General Secretary had received no reports and the President invited Group Organisers to comment from the floor. There was no response; reports had been published in the 1999 *Bulletin*.

The *en bloc* adoption of the reports given under items 4 to 11 inclusive was proposed by Mr J.R. Woodhams and seconded by Mr P.H. Ripley. The proposal was carried unanimously.

Item 12 – CHANGES TO THE CONSTITUTION: As reported by the General Secretary under item 4 above, the Committee had felt that some changes to the Constitution were necessary. The proposed changes had been circulated with the last *Bulletin*.

The Committee felt it prudent to ask the Society to agree the addition of the words "*through publications, meetings and grants*", to the end of Item 2, OBJECTS, of the Society's Constitution, so that it would read: "*The objects of the Society are to promote and encourage the cultivation of ferns and other pteridophytes and to further the study of their taxonomy, distribution, conservation and ecology through publications, meetings and grants.*"

Although the Membership Secretary and Conservation Officer were attending Committee Meetings, they had no voting rights. It was felt that this was an anomaly and that the holders of these offices should be ex-officio full members of the Committee. It was also decided that the position of holders of Committee Appointments, such as the Booksales and Spore Exchange Organisers, *vis-à-vis* the Committee should be made clear. To this end the following changes had been proposed to Item 3, MANAGEMENT:

i. First Sub-paragraph to be replaced with: "*The Officers of the Society shall consist of a President, up to six Vice-Presidents, a General Secretary, a Treasurer, the Editors of the Society's regular publications comprising the* Bulletin, *the* Fern Gazette, *the* Pteridologist, *the Society's World Wide Web Site, a Membership Secretary, a Meetings Secretary and a Conservation Officer. All posts being honorary.*"

ii. The last word of the second Sub-paragraph to be replaced with: "*Officers of the Society*".

iii. After the second Sub-paragraph insert additional Sub-paragraph as follows: "*Any Holders of Committee appointments, such as Spore Exchange Organiser, Plant Exchange Organiser, Booksales Organiser, or Archivist, who are not also either an elected Officer of the Society or an elected Member of the Committee, will be eligible to attend Committee Meetings but will have no voting rights.*"

iv. The fourth sentence of the existing third Sub-paragraph to be amended as follows: delete "*The Honorary General Secretary, Honorary Treasurer, Editors and Meetings Secretary*". Replace with: "*All other Officers of the Society*".

The acceptance of the changes was proposed by Mr A.R. Busby, seconded by Miss J.M. Camus and carried unanimously.

Item 13 – ELECTION OF OFFICERS AND COMMITTEE MEMBERS:

Before beginning the election of officers, the President thanked J.R. Woodhams, who had come to the end of his term of office as a Vice-President, for his service to the Society. John had been the Society's link with the Royal Botanic Gardens, Kew, for many years before he took early retirement, and for many years he organised the annual BPS meeting there. With his wife Joan, they provided the afternoon tea at Professor Holttum's home when the Professor and his wife were getting on in years and continued to provide tea when

we could no longer go 'across the Green'. As Vice-President he had regularly attended Committee meetings; his contribution would be missed very much.

The serving Officers of the Society were all eligible for re-election and had indicated their willingness to stand. It was proposed by S.D. Martinelli and seconded by A.R. Busby, that the officers be re-elected. The vote was unanimously in favour.

Wg Cdr E.J. Baker and Mrs M.E. Nimmo-Smith were retiring as elected Committee Members, being the two longest serving members, and Miss R.J. Murphy was resigning because of eyesight difficulties. The President thanked them for their loyal service and was especially saddened that Rose Murphy had found it necessary to resign as she had made very positive contributions at Committee meetings. He wished her all the best for the future. Mr M.S. Porter, because of the changes to the Constitution agreed at this meeting, was now an *ex officio* member of the Committee by virtue of his position as Membership Secretary. There were already two vacancies on the Committee, so the total number of vacancies was now six. Two nominations had been received before the meeting: Mr R.G. Ackers, proposed by M.H. Rickard, seconded by J.M. Ide, and Dr S.D. Martinelli, proposed by P.J. Acock and seconded by P.H. Ripley. There were no nominations from the floor and R.G. Ackers and S.D. Martinelli were elected unanimously.

Item 14 – ELECTION OF AUDITORS: R.G. Ackers had offered his resignation as an auditor and the President thanked him for his service during the past four years. P.H. Ripley had indicated his willingness to continue as an auditor and was duly re-elected. There was no nomination to replace R.G. Ackers.

Item 15 – ANY OTHER BUSINESS:

a. The President congratulated Dr Mary Gibby on her appointment as Director of Science at the Royal Botanic Garden, Edinburgh and hoped that members would still see her at meetings.

b. The President, on behalf of the Society, expressed his thanks to Dr Gibby and her associates for arranging the meeting at Chelsea Physic Garden. There being no further business, he thanked members for attending and declared the meeting closed at approximately 15.15 hours.

Jennifer M. Ide
Hon. Gen. Secretary

Notes to the Accounts

1. The Society had the following stocks of books at 31.12.1999 (1998 stocks in brackets): *Fern Names and their Meanings* 173 (188), *Cultivation and Propagation of British Ferns* 0 (113), *History of British Pteridology* 834 (841), *BPS Extracts and Papers* 437 (439).
2. The accounts reflect the subscriptions actually received in the year. The actual number of subscribers was very similar in 1998 and 1999.
3. BPS Booksales had assets of £5,738.33 (£5,159.97) at 31.12.1999.
4. The Centenary Fund had 177 (179) copies of *A World of Ferns* at 31.12.1999.
5. The Society also possesses the following assets with less tangible value: Back issues of the *Bulletin*, *Fern Gazette* and *Pteridologist* valued at approximately £3,000. Merchandise valued at approximately £1,000.
6. The Society made one grant from the Centenary Fund of £250 to W.D. Speer to attend the 1999 International Bracken Conference in Manchester (see 1999 *Bulletin* 5(4): 196).
7. Several foreign participants paid for the BPS trip to New Zealand using the BPS credit card facility. This resulted in no overall cost to the BPS.

FINANCIAL STATEMENT AS AT 31 DECEMBER 1999

ORDINARY ACCOUNT

(1998)	INCOME:	1999
£10,893.50	Subscriptions	£12,937.93
961.93	Interest	752.00
16.15	Booksales	–
4.00	Spore Exchange	–
202.00	Merchandise	298.75
–	Plant Sale	18.00
–	New Zealand Trip	3,606.72
£12,077.58	**TOTAL INCOME**	**£17,613.40**
	EXPENDITURE:	
2,901.69	Pteridologist	2,160.77
1,140.80	Gazette	4,013.87
3,232.65	Bulletin	2,434.24
623.65	Printing & Stationery	310.03
750.36	Administration & Postage	1,026.99
24.10	Subscriptions to Societies	40.20
118.50	Plant & Spore Exchanges	135.87
931.50	Meetings	285.00
75.50	Merchandise	–
70.00	Mapping Project	–
–	New Zealand Trip	3,606.72
1,000.00	Booksales	–
69.58	Special Interest Groups	49.17
£10,938.33	**TOTAL EXPENDITURE**	**£14,062.86**
1,139.25	BALANCE for 1999	3,550.54
13,451.42	Brought forward from 1998	14,590.67
£14,590.67	**Carried forward at 31.12.1999**	**£18,141.21**

CENTENARY FUND

5,736.83	Brought forward from 1998	6,171.08
410.25	Interest	318.06
–	Grants	(250.00)
24.00	World of Ferns	16.00
£6,171.08	**Carried forward at 31.12.1999**	**£6,255.14**

GREENFIELD FUND

1,622.45	Brought forward from 1998	1,738.47
116.02	Interest	89.60
£1,738.47	**Carried forward at 31.12.1999**	**£1,828.07**

PUBLICATIONS ACCOUNT

3,712.60	Brought Forward from 1998	4,539.72
265.49	Interest	233.98
274.58	Offprints	66.52
68.40	Special Publication No. 2	50.80
126.00	Special Publication No. 3	378.80
44.40	Special Publication No. 4	42.60
48.25	Special Publication No. 5	20.25
£4,539.72	**Carried forward at 31.12.1999**	**£5,332.67**

Doryopteris – A Grant from the Centenary Fund

I would like to convey my gratitude to the Trustees of the British Pteridological Society's Centenary Fund for the grant in 2000 which helped me to cover some of the expenses for my fieldwork in Brazil.

I have been working on my PhD project entitled: 'A systematic survey of the genus *Doryopteris* J.Sm. (Pteridaceae, Pteridophyta)', under the guidance of Dr A. Culham (The University of Reading), Dr Mary Gibby (Royal Botanic Garden, Edinburgh) and Miss Josephine Camus (The Natural History Museum, London). *Doryopteris* is primarily a Brazilian genus: 21 of the 22 neotropical species are found in Brazil, ten of which are endemic. Most studies which refer to *Doryopteris* are limited in scope to the general systematic aspects of the genus. The difficulty in establishing reasonable subgeneric limits in *Doryopteris* means that some species have been retained in the genus for convenience or are distinguished by only a few critical characters. This unsettled taxonomy is attributed to using only traditional morphological criteria.

In my study, phylogenetically informative molecular data will be assembled to reconstruct the phylogeny and revise the problematic taxonomy of *Doryopteris*, using also cytology and morphology.

It took some months for me to arrange my trip and plan the fieldwork. I had to prepare a budget, use references and information from existing herbarium collections to plan the itinerary, obtain permission to collect, assemble materials for preparation of the samples, make arrangements with the guides and for car rental. This was to be my second field trip in south-east Brazil, around Sao Paulo and Rio de Janeiro.

There were, however, factors beyond my control that left me feeling quite anxious. La Niña phenomenon had caused havoc in large parts of Brazil: the constant rain caused widespread floods, many roads had been closed and thousands of people became homeless. As a result, I had to postpone my fieldwork to June 2000.

Once again, early in 2000, I made all the preparations. Fortunately I was awarded a 'conservation' return air ticket by British Airways. However, I was still worried about the weather, as there was a forecast that the winter would be the driest for five years. Unfortunately, this proved to be correct and, once again, plans had to be amended. We travelled about 3,000km searching for *Doryopteris*. As a result of the unusually dry winter we travelled through a landscape that was difficult to recognise: everything had turned brown, the suffering of nature (drought) made worse by fires. Most species of *Doryopteris* are rupicolous, i.e. they grow in rock crevices, and as the streams dried up, so did the ferns.

Most botanists worry about drying specimens in the field, but I had to soak the plants to get the fronds to open out again before I could press them to make decent herbarium specimens.

I should, however, give the happy news: despite the adverse conditions I found about seven species of *Doryopteris*, some of which I had not collected previously.

The Fund helped to cover some of my expenses during this trip. I would also like to take this opportunity to thank Dr Jefferson Prado and P. Labiak for their help during this fieldwork.

Jovita Cislinski Yesilyurt

SPECIAL INTEREST GROUPS

FOREIGN HARDY FERN GROUP

A.R. Busby

Once again I must report that I have not been able to get the next edition of the Newsletter out. Several new members have expressed an interest during the year and their names have been added to the list. I will do my best to get something out in the near future. If anyone would be interested in taking over as Organiser of the Foreign Hardy Fern Group / Editor of the Newsletter I would be pleased for them to contact me.

Enquiries to: A.R. Busby, 16 Kirby Corner Road, Canley, Coventry CV4 8GD.
E-mail: ForeignHardyFerns@eBPS.org.uk

TREE-FERN GROUP

A.C. Wardlaw

Interest in tree-ferns continues to develop hand in hand with the widening availability of these exciting plants at many garden centres in the UK, as well as from the specialist suppliers, including our own President! Also the annual BPS spore list contains many species for those prepared for the long haul from spore to trunked tree-fern. The BPS Tree-Fern Special Interest Group continues to increase its membership, which now stands at 38, including several who live outside of Britain. Six Tree-Fern Newsletters have been issued since the start of the Group in 1995, with the seventh expected by the end of 2000. Most of the Newsletter material so far has dealt with the cultivation and winter-protection of tree-ferns, and with visits to tree-ferny places. For the Convenor the principal problem is persuading the membership to submit pictures, or accounts of their experiences with tree-ferns, for the Newsletter, but hopefully this will improve with time. There is also the question of whether Newsletter articles about tree-ferns would be better placed, or reproduced, in the *Pteridologist*, so as to benefit a larger readership. Those of us who live in Britain should be aware that we are privileged in our access to mature specimens of several species of tree-ferns, imported from the Southern Hemisphere. In the USA, by contrast, the importation of trunk-size tree-ferns, e.g. from Australia, is virtually impossible because of Department of Agriculture restrictions. There is much still to be learned about the cultivation and protection of tree-ferns, not only as a sustainable enterprise in their native lands, but also in the 'global village' beyond. Contributions to these questions can be expected to emerge from the BPS Tree-Fern Special Interest Group.

photo: J.M. Ide

Cyathea medullaris in New Zealand

Enquiries and contributions to Alastair C. Wardlaw, 92 Drymen Road, Bearsden, Glasgow G61 2SY. E-mail: TreeFerns@eBPS.org.uk

FILMY FERN GROUP

S.J. Munyard

Unfortunately, due to other commitments, the Newsletter for the Filmy Fern Group is still in preparation. It should be completed in the next few weeks.

Anyone else interested in joining this group should contact Steve Munyard at 234 Harold Road, Hastings, East Sussex TN35 5NG. E-mail: ForeignHardyFerns@eBPS.org.uk.

CONSTITUTION
OF THE BRITISH PTERIDOLOGICAL SOCIETY

As adopted at the AGM 27 September 1961 (with amendments 1972, 1975, 1983 and 2000)

1. **NAME** The Society shall be called "The British Pteridological Society".

2. **OBJECTS** The objects of the Society are to promote and encourage the cultivation of ferns and other pteridophytes and to further the study of their taxonomy, distribution, conservation and ecology through publications, meetings and grants. *(March 2000)*

3. **MANAGEMENT** The Officers of the Society shall consist of a President, up to six Vice-Presidents, a General Secretary, a Treasurer, the Editors of the Society's regular publications comprising the *Bulletin*, the *Fern Gazette*, the *Pteridologist*, the Society's *World Wide Web Site*, a Membership Secretary, a Meetings Secretary and a Conservation Officer. All posts being honorary. *(October 1972, March 2000)*

   The Management of the Society shall be in the hands of a Committee consisting of not more than ten elected members with the addition of the Officers of the Society. Five members, of which one will be an Officer, shall constitute a quorum. The Committee shall have the power to co-opt additional members for special purposes, including Assistants to the Honorary General Secretary, Honorary Treasurer and Editors of Publications. *(October 1972, March 2000)*

   Any Holders of Committee appointments, such as Spore Exchange Organiser, Plant Exchange Organiser, Booksales Organiser, or Archivist, who are not also either an elected Officer of the Society or an elected Member of the Committee, will be eligible to attend Committee Meetings but will have no voting rights. *(March 2000)*

   The President shall be elected at an Annual General Meeting and remain in office for three years and on retirement shall not be eligible for immediate re-election. All Vice-Presidents shall be elected at an Annual General Meeting and remain in office for six years. On retirement they shall not be eligible for re-election. All other Officers of the Society shall be elected at the Annual General Meeting and remain in office until the next Annual General Meeting when they shall retire but be eligible for re-election. Members of the Committee shall be elected at an Annual General Meeting, and shall remain in office until the next Annual General Meeting when they shall retire but be eligible for re-election with the exception of the two members with the longest service who shall not be eligible for re-election until after the lapse of one year. In the event of there being more than two members of the Committee who would be ineligible for re-election, the names of those to retire shall be decided by lot. Should a vacancy occur during the year, such a vacancy may be filled by Committee. *(February 1983, March 2000)*

   A resolution in writing signed and agreed to by all members of the Committee for the time being in the United Kingdom shall be as valid and effectual as if it had been passed at a meeting of the Committee duly called and held, and may consist of several documents in the like form each signed by one or more members of the Committee.

   Nominations for Officers and members of the Committee must normally be received by the Honorary General Secretary twenty-one days before the Annual General Meeting.

4. **MEETINGS** The Annual General Meeting of the Society shall be held at such time and place as the Committee may decide for the purpose of passing accounts, electing

Officers and the Committee and transacting the general business of the Society. General and field meetings shall be held at the discretion of the Committee.

An Extraordinary General meeting shall be called by the Honorary General Secretary within thirty days of receiving a request in writing of the Committee or of not less than twenty members stating the purpose for which such a meeting is required.

At least twenty-one days notice of any General Meeting shall be given to all members.

5. **NOTICES** The accidental omission to give notice of a meeting to, or the non-receipt of notice of a meeting by, any member shall not invalidate any proceedings or resolutions at any meeting of the Society or any Committee thereof except in the case of removal from membership.

6. **ORDINARY MEMBERSHIP AND SUBSCRIPTIONS** The annual subscription payable by members shall be payable in advance, and due on the First of January in each year, or on the election of the members. The rates of subscription shall be fixed by a General Meeting from time to time. *(October 1975)*

7. **HONORARY MEMBERSHIP** The Committee may elect any person or persons to Honorary Membership of the Society. Honorary Members shall be entitled to all the privileges of membership, but shall not be liable for payment of any subscription.

8. **REMOVAL FROM MEMBERSHIP** Any member failing to pay his subscription within six calendar months of its becoming due shall be liable to have his name removed from the List of Members of this Society.

   Any member whose conduct in the opinion of the Committee is prejudicial to the interests of the Society may be removed from membership by a two-thirds majority vote of those present at a meeting of the Committee on the Agenda of which the words "Removal of a Member" shall have appeared; provided no member may be so removed unless due notice has been sent to the member of the intention of the Committee to proceed under this rule and of the nature of the charges made and an opportunity has been afforded of answering such charges to the satisfaction of the Committee. A member so removed shall forfeit any claim upon the Society.

9. **AWARDS** The Committee may make awards in respect of plants of outstanding scientific or horticultural interest.

10. **ALTERATION TO RULES** This Constitution may be altered as follows:
    Any proposal for alteration or addition to this Constitution shall be in writing, and shall be signed by two members, and be deposited with the Honorary General Secretary not less than thirty days before the Annual General Meeting. Such alteration or addition shall be included in the Agenda of that meeting and circulated to all members and shall not be carried unless the votes of two-thirds of the members present at the meeting are cast in favour.

11. **DISSOLUTION** The Society may be dissolved by a vote of at least three-quarters majority of those present and voting at an Extraordinary General Meeting called for that purpose and if an effective resolution for dissolution is passed the surplus funds and property of the Society shall be disposed of to an agreed charitable organisation of similar interest.

British Pteridological Society Safety Code

In common with other scientific and natural history societies, the BPS has drawn up a safety code for its meetings, in particular field meetings. Every meeting leader will have a copy for consultation by participants but every participant should read the code and take the appropriate responsible action for each meeting he or she attends.

PARTICIPATION IN MEETINGS The BPS will, through the meeting leader, at the beginning of the meeting, draw the attention of participants to the points below. It is the duty of all participants to practise extreme care and common sense and not to take risks. The following points are particularly important in taking ultimate responsibility for your own safety:

1. Ensure that you are adequately clothed and equipped.
2. Never leave the main party without notifying the leader of your plans.
3. Pay particular attention to the hazards of the terrain and their potential danger, as a result of your actions, to others. For example, be careful not to dislodge loose stones and boulders.
4. Do not rock-climb without experience and the proper equipment.
5. Do not damage walls, fences, hedges, gates, etc.
6. Leave gates open/shut as the party finds them.
7. Take care not to start a fire.
8. Familiarise yourself with the procedure to adopt in the event of an accident in the field.

CLOTHING AND EQUIPMENT Always carry windproof and waterproof outer clothing and wear suitable footwear, e.g. walking boots or, in certain circumstances, wellingtons. All clothing should be suitable for the job (e.g. jeans not recommended) and for the worst potential weather. Carry sufficient food and drink for the excursion, with some extra in case of emergency. A first-aid kit is also advisable.

In mountains, the following are necessary:

1. Two warm, long-sleeved sweaters of wool or similar material.
2. Properly fitting walking or climbing boots with commando-type or Vibram soles, worn over suitable woollen socks. Footwear should be waterproof but wellingtons should not be worn.
3. A rucksack with spare sweater and (if not being worn) anorak/cagoule and over-trousers.
4. A whistle, compass, maps, torch, first-aid kit.
5. A survival bag if more than ½-hour from the nearest inhabited place.

At all outdoor meetings, it is worth considering carrying an emergency survival blanket. They can be obtained, for approximately £3, from retail outlets selling outdoor leisure clothing and equipment. They are very light (*c*.85 g) and occupy very little space.

PROCEDURE IN THE EVENT OF AN ACCIDENT IN THE FIELD First-aid must be rendered at once, and medical and relief help should be sought if necessary. Prevention of exposure is almost always possible through adequate clothing, equipment and procedure, but if a case is suspected the initial treatment is additional warm clothing and a windproof or waterproof outer garment, plus ingestion of a source of rapidly absorbed food, such as sugar or glucose in solid or liquid form, preferably hot liquid.

THE INTERNATIONAL DISTRESS CODE IN MOUNTAINS
Six long flashes/blasts/shouts/waves in succession, repeated at 1-minute intervals.

The following publication may also prove helpful: Jackson, J. *et al.* (reprinted 1982) *Safety in Mountains*. Obtainable from the British Mountaineering Council, Crawford House, Precinct Centre, Manchester University, Booth Street East, Manchester, M13 9RZ.

(Adapted from the Safety Code of the British Bryological Society)

eBPS

The BPS has recently been making important advances in the way it uses new communications technology to further its aims and run the Society. In addition to the web site, which we started in 1997, we now increasingly use e-mail, along with other computer and Internet facilities in the everyday running of the Society. Many members will be aware of much of this, but we thought it worth summarising what's been going on to make sure everyone was up to date. We call these initiatives eBPS (electronic BPS).

I make no apology for encouraging the BPS into all this new technology – I see it as the means of keeping the Society alive and relevant. Like most of you I expect, I love the timeless, peaceful qualities of ferns, I also love to feel the fine ink printing of a Victorian fern book. I see no reason why the BPS, which has spent most of its time in the 20th century, should not also be firmly rooted in both the 19th and the 21st.

Domain Names and E-mail Addresses

The main BPS web site is now accessible by the name www.eBPS.org.uk. Although most of the BPS site is still physically located on the Internet server computer at the Natural History Museum, the use of this name, or *URL*, means that we can quote and publish 'www.eBPS.org.uk' in the knowledge that this will always be our address, irrespective of how we might physically locate the web site in the future. It's also rather easier to remember and type than 'www.nhm.ac.uk/hosted_sites/bps'.

Having the *domain name* eBPS.org.uk also enables the Society to have its own permanent e-mail addresses for the various officers, groups and activities. These can be redirected to the relevant personal e-mail addresses of the people currently responsible. Again, this enables us to publish those e-mail addresses in journals, etc., knowing that they will stay up to date. For example we have 'Secretary@eBPS.org.uk' (redirected to Jennifer Ide) and 'Spores@eBPS.org.uk' (redirected to Barry Wright).

We have also registered a number of other domain names, mainly for future use. It's important on the Internet to have distinctive and memorable names, especially where we want to attract the attention of people who know little or nothing about either the BPS or pteridophytes. It also makes it easier to structure the public access to our web site(s), by giving distinct names to sub-sections of the whole, e.g. 'www.FernGazette.co.uk' points to the *Fern Gazette* front page 'www.eBPS.org.uk/gazette.htm'. We also have a 'dot com' address for use when eBPS gets into e-commerce(!) – more of that later.

The BPS Web Site

The BPS web site, 'Fern World Wide Web' has now grown to 45 pages, with 256 files and about 10Mbytes of storage. We have been receiving an average of 20 visitors a day, which may not sound many but is quite good for a small specialist society. Now that the new eBPS.org.uk address is established, we will increase our efforts to 'advertise' our presence and ensure that the Internet *search engines* reach us.

We have tried hard to produce a good quality site, making it attractive and 'professional', avoiding the all-too-frequent gaudy colours and flashing images seen elsewhere on the Internet. We do however, make use of up-to-date web site technology where appropriate and have in place visit tracking software, to give us a wide range of statistics, such as how many people are visiting, what type of screen display they are using and which other web sites they linked to us from. We also have a notification system to enable visitors to receive an e-mail telling them when we have updated the site. Other features currently under test, and hopefully soon to be implemented include a full-text search for the whole site and language translation. Perhaps surprisingly, most of these facilities are free to the Society (apart from time if one were to cost that up!).

However, what really counts on the World Wide Web is content rather than technique so we are trying hard to increase the information value of the site. The site currently includes a large amount of Society information, and items such as abstracts from the *Fern Gazette*, extracts from BPS reports of about 100 years ago, pteridophyte images, '*Where to see Ferns*' and links to other pteridological web sites. Other things currently planned include basic fern 'information sheets', a book list (with links to on-line sales) and a revised '*Where to see Ferns*' with pictures and maps.

Some Other Initiatives

There are two e-mail message distribution lists: BPS and BPS-Committee. These enable participants to send a message to the list, which is then automatically distributed to all the other members. This can be very useful as the equivalent of a newsletter or sending out notices. The BPS list is open to all BPS members for matters of general Society interest (go to 'www.onelist.com/community/BPS' to subscribe) and the BPS-Committee one is for the committee to easily communicate in-between formal meetings. Other lists could easily be set up, e.g. for regional groups or special interest groups, if there was a demand.

We are looking at the possibility of scanning some of the Society's past publications and records. These could then be made available on the web site, or sold on CD-ROM. This would make them much more accessible and also ensure that archive copies exist.

Increasingly, the preparation of the printed journals (and other Society publications) is done electronically, using word-processing and page setting programs. As well as cutting time scales and costs, this ensures that the final publication is exactly as the editor intended and the existence of an electronic copy means that it can be used for search and indexing and is available for publication on CD-ROM or the Internet.

How to Gain Access

Today, everyone can get access to the World Wide Web and e-mail for, at most, the cost of a cheap rate telephone call. Many service providers (*ISP*s) now offer the basic subscription for free. Even if you don't have a PC, you can still access the World Wide Web and e-mail at a public facility such as an 'Internet Café' or a public library (where use of the terminal is usually free). Help is usually available at such places. If anyone has serious difficulties getting on-line, please get in touch (by 'phone!).

How to Help

All of the things discussed above need time and effort to implement. In particular, the web site depends upon the steady supply of new material to keep it up-to-date and attractive to visitors. Many (if not all) members could probably contribute something. Essentially, anything about pteridology, growing or botany, text or pictures, which is of 'publication quality', can probably be used somewhere on the site. A web site has a number of important advantages over traditional printed publications, e.g. there are no serious size limitations, either in total or for individual items, it can be frequently updated and large colour illustrations are very cheaply published. All of this means that items that might be difficult to publish on paper, can be very easily dealt with on the web site. Please think about how you could contribute.

One role we are particularly keen to fill is that of desk-top-publishing / technical editor for the Society's journals and other publications. We need someone with a little time and the ability to help with the desk-top-publishing aspects. This may sound more complex than it really is – if you're comfortable with a word-processor, such as MS Word, you could do it.

If anyone needs any further explanation abut how they could help, or would just like to chat about it, please contact me, or in the case of the desk-top-publishing, Josephine Camus.

Anthony Pigott

OBITUARIES

Prof. WARREN HERBERT WAGNER, Jr 1920 – 2000

photo: J.T. Mickel

Prof. W. Herb Wagner, Jr 1920 – 2000

Herb Wagner was born in Washington, DC, on 29th August 1920. At that time Washington was still a small city, and parks and countryside were close at hand. Herb became interested in the natural sciences at an early age. He came to know several government and Smithsonian scientists including William R. Maxon and Conrad V. Morton (Smithsonian pteridologists), Edgar T. Wherry (Department of Agriculture mineralogist and later plant taxonomist at the University of Pennsylvania) and J.F. Gates Clark (Smithsonian lepidopterist). He completed his undergraduate work at the University of Pennsylvania in 1942.

Service as a navigator in the U.S. Navy's air force allowed him time to collect plants and butterflies and the routes he flew gave him access to many places. He made a few collections in South America and the Caribbean, but spent most of his time in the Pacific, especially on Guam. Battles had scarcely come to an end on some Pacific islands, and he found that butterflies were greatly attracted to the corpses that lay beyond the defence perimeters of the American installations. Although he could easily have been shot by a sniper, a butterfly net was the equivalent of waving a white flag and kept Herb safe when collecting either butterflies or plants. He gave his butterfly collections to the Smithsonian Institution and his plant collections to the University of California, Berkeley, and the University of Michigan, Ann Arbor.

After the war, Herb continued his university education, completing his PhD at the University of California in 1950. He was officially a student of Prof. Lincoln Constance, but Edwin B. Copeland, who had retired to Berkeley from the Philippines before the war, was his principal mentor. His dissertation was on the systematics of the Hawaiian endemic genus *Diellia* (Aspleniaceae). During his time at Berkeley, he met and married Florence Signaigo, who was completing a PhD dissertation on the morphology of the Delesseriaceae (Rhodophyta). It is said that their courtship can be traced by reading specimen labels in the University of California herbarium.

In 1951, after a post-doctoral year at Harvard University and the Gray Herbarium, the Wagners settled in Ann Arbor, Michigan, where Herb had accepted a position at the University. He joined the BPS in 1964. Herb taught courses in spring flora, plant evolution and woody plants. He was a superb teacher, whether lecturing undergraduate students, advising graduate students or leading field trips. Herb was never happier than when he was teaching. He was chairman or co-chairman of 45 doctoral committees and served as a member of more than 240 other graduate committees, certainly a record in the Department of Botany (or Biology, as it later became), if not in the entire University.

At the same time, Herb maintained a busy research schedule, with emphasis on the taxonomy of *Botrychium* and the pteridophytes of Hawaii. With such an encompassing and inquiring mind, he investigated many phenomena in diverse plant groups as well as in butterflies. From his interest in phylogeny and evolution, he developed the ground plan divergence index and its visual representation, which has become known as a Wagner tree. He published more than 400 scientific papers.

Herb was the director of the University's Matthaei Botanical Gardens from 1966 to 1971. He was interested in outreach, in pointing out the importance of the biological sciences to everyone's life, and he often gave talks to citizen groups. He was honoured many times by the University and by scientific societies and was elected to membership in the National Academy of Sciences in 1985.

His hobbies were butterflies, especially the taxonomically difficult little blue skippers, and mineralogy, probably as a result of his early contacts with J.F. Gates Clark and Edgar Wherry. Florence and he displayed his best mineralogical specimens at home, and every year's Christmas card was a colour drawing of a different butterfly.

Although he officially retired in 1991, Herb continued his activities much as before, albeit slowed slightly by heart and circulatory difficulties. Herb died on 8th January 2000 at the age of 79. He is survived by his wife of 51 years and by his children Warren and Margaret, and by two grandsons, Reid and Haven. A memorial was held on April 2nd that nearly overflowed a large auditorium in the Rackham School of Graduate Studies on the University of Michigan campus. By any measure, he was the principal American pteridologist of the latter half of the twentieth century.

David Lellinger

Warren 'Herb' Wagner – A Personal Appreciation

When I took up the post of Pteridologist at the then British Museum (Natural History) in 1958, I automatically received the many reprints sent to my predecessor, A.H.G. Alston. Among them were stimulating papers from a Professor in Ann Arbor, Herb Wagner, with whom I soon struck up a correspondence. In 1964 the International Botanical Congress was hosted at Edinburgh and although not an official delegate from the Museum, I was encouraged to fly up for a day to attend a mini-symposium on pteridology at which both Herb and Irene Manton were speaking.

At a coffee break after his talk, Herb came over to me and characteristically hailed me as if an old friend, accepting me as a member of the international fern fraternity (small as it was) in spite of the fact that I was a 'greenhorn' who was only just coming to grips with the vast diversity of ferns worldwide. I remember a lunch in a basement in George Street where Prof. Manton and Herb argued the merits of plant nomenclature that reflected the auto- or alloploid origins of the *Asplenium* and *Dryopteris* species that they or their students were evaluating. Nothing was resolved – nor has ever been and the topic is still as valid now as it was then. At the Quillwort Conference in Douglas, Georgia, in March 2000 (where Herb's absence was sadly lamented), the subject was again debated by Herb's students of two generations.

In 1967 Herb was invited to speak at a biological symposium in Liverpool and as dates were consecutive I suggested he joined the BPS excursion to Kettlewell. He did, and thoroughly enjoyed himself rushing up and down dale looking in crevices for Hymenophyllaceae gametophytes which he and his student Don Farrar had recently described as spreading far beyond the geographical range of their sporophyte counterparts in North America. Herb later wrote to me about the excursion and re-stated his view that he "would be surprised if [we] did not discover these things growing over a wider range than

the sporophyte". I am ashamed to say we failed to take up the challenge seriously and it was Don Farrar himself, on a visit to Manchester University in 1989, who recognised the filamentous gametophyte of the Killarney fern near Derwent Water whilst looking for gametophytes of *Hymenophyllum tunbrigense*.

Over the next 30 years Herb (and his wife Florence, also a botanist of repute) kept in touch and visited London and my home in Otford. I visited them in Ann Arbor in 1970 for several days and again in 1995. On both occasions we went hunting *Dryopteris* hybrids in delightful Michigan woods and although in 1995 Herb took ferning at a more leisurely pace, his enthusiasm was just as strong and stimulating – worth the flying visit for a three day weekend! I had hoped to persuade Herb and Florence to come and hunt *Botrychium* in Europe, but it was not to be.

Clive Jermy

Prof. RAMÓN RIBA 1934 – 1999

Ramón Riba was born on 24th April 1934 in Mexico City; he joined the BPS in 1998. Ramón was Professor at the Universidad Nacional Autonoma de Mexico (1955-1991) and Universidad Autonoma Metropolitana-Iztapalapa (1974-1999) in the Department of Biology/Structural Botany and Systematics. He authored many papers on the taxonomy, floristics, conservation, spore banks, bibliography and morphogenesis of ferns and was coeditor of the pteridophyte volume (vol. 1) of *Flora Mesoamericana*. He was one of the first people to study this group of plants in Mexico.

He was patient with all his students and his office was open to them all day – no appointment was necessary. He was highly disciplined, being demanding in his work, in the presentation of his papers and in his correspondence. He wrote and spoke well and frequently liked to explain the meaning of a term or to improve the accuracy of the manuscripts that his students presented to him. Ramón had a well-developed sense of friendship and solidarity with his collaborators and pupils, and he did not tolerate any kind of dishonesty on the part of those associated with him. He was a very special person who liked to make jokes and laugh at them himself; he also had a beautiful voice that all enjoyed on field trips or parties. He died in his home of a heart attack on 13th December 1999.

Leticia Pacheco

Dr JOSEF HOLUB 1930 – 1999

Josef Holub began his scientific career at the Department of Botany, Charles University, Prague, but most of his life was devoted to work at the Institute of Botany, Průhonice. Among other duties, he was Editor-in-chief of *Preslia* and President of the Czech Botanical Society.

His studies embraced the taxonomy and nomenclature of several vascular plant families but it is his work on pteridophytes, especially Lycopodiophyta, that we may remember most. He was a great 'splitter', grouping many species into 'microgenera' on intuition rather than through monographic studies. In Lycopodiaceae for instance, he recognised eleven genera where most botanists would now accept four or five. However, he did jolt many botanists 'out of a groove' in seeing these larger, often ancient, genera in a new, phylogenetic, light. He had a sound understanding of nomenclatural rules and a good command of English, both when reading and writing, and his case for understanding both Newman's and Wollaston's concepts of species in relation to *Dryopteris borreri* [Newman] and *pseudomas* [*Lastrea* Wollaston] was thorough and well explained in print [*Folia Geobot. Phytotax. (Praha)* **2**: 329-332. 1967], bringing the issue to the attention of British botanists.

Josef Holub visited Britain in 1967 at the invitation of the Flora Europaea Committee and I was pleased to meet him. In spite of working under austere conditions during the communist regime in Czechoslovakia, he was a good correspondent and welcomed warmly any who got permission to visit him.

Clive Jermy

Wing Cdr ERIC BAKER 1923 – 2000

It is with regret that the death of Eric Baker on 12th August 2000 has to be reported.

Eric joined our Society in 1993 with his wife, Rita, though he had been out on field trips with the Leeds & District group prior to that. After becoming a member he also made regular trips, accompanied by Rita, with the North West group as well as participating in various National field and indoor meetings. The Leeds group used to man a stand at a local fête in Harrogate to promote the Society and to sell a few plants to raise funds, and Eric always drove over from his home near Clitheroe to help man the stand for three or four hours. He also brought some very good plants for sale.

He became an avid collector of garden ferns as his knowledge of these plants increased and his garden was a joy to behold. Everything he planted seemed to grow to perfection.

Eric was elected to the Committee in 1995 and he also served as minutes secretary, a task which requires a good deal of patience. Eric will be greatly missed by the Society and especially by the two regional groups to which he was certainly a great asset. I personally am saddened to lose such a good friend and colleague. We extend our condolences to Rita.

J.H. Bouckley

BETSY KOHLER 1934 – 2000

Betsy Kohler became a member of the Society after visiting Southport Flower Show in 1991. Members of the Leeds and District group will be particularly saddened by the death of this very popular member. Betsy was regularly seen at National as well as Group meetings and will be greatly missed by many Society members, especially those new to the world of ferns, as she had a unique method of describing the intricate differences between various species.

She was very keen on sailing and during a boating holiday on the Clyde there was an involuntary gybe which caused her to fall and hit her head. Betsy suffered injuries from which she died on 6th October 2000. Our sympathies extend to her three sons and one daughter.

J.H. Bouckley

IN MEMORIAM

We were also sorry to learn of the death of the following members and other pteridologists:

Mr Anthony Marriage of Lyme Regis who joined the Society in 1986.

Mr Richard Regan of Derby who joined the Society in 1995.

Mrs G. Soltau of Birkenhead who joined the Society in 1997.

Mr Jeffrey Thomas of Hinckley who joined the Society in 1997.

Dr Charles H. Lamoureux, Professor and Director of the Lyon Arboretum, Honolulu, Hawaii.

Mr Jim Lord of Austwick who had a fine collection of ferns and was well known to some members.

MEMBERSHIP LIST: ADDITIONS AND AMENDMENTS

NEW MEMBERS

*~ new members 1999; * new members 2000, ** new members 2001; # members rejoined 2000*

* Amey, Mr M.G., 22 Railway Place, Hertford, Herts. SG13 7BS
* Andrews, Mr S.C., 199 Roman Road, East Ham, London E6 3SJ
* Barlow, Mr H.W.B., Oaklands, Thurnham Lane, Bearsted, Maidstone, Kent ME14 4PL
* Bell, Dr G.T., 8 Mains River, Erskine, Renfrewshire PA8 7SP, Scotland
* Blackaller, Mr S.A., 4 Drayton Road, Manadon, Plymouth, Devon PL5 3ES
* Blesing, Miss E., 71A Old Dover Road, Capel-le-Ferne, Folkestone, Kent CT18 7HS
* Chambers, Mr C.M., 15 Montfort Crescent, Sherwood, Notts. NG5 3EH
* Charlton, Rev. C., 35 Avondale Road, Mottingham, London SE9 4SN
* Corbett, Mr A., West Park, Lower Anderton Road, Millbrook, Torpoint, Cornwall PL10 1DT
* Coudret, Dr C., 35 Rue Riquet, Toulouse 3100, France
* Criddle, Mrs M.V., 5 Storeys Lane, Burgh Le Marsh, Skegness, Lincs. PE24 5LR
* Cross, Mr N.J., 1 Forest Edge, Buckhurst Hill, Essex IG9 5AA
** Davies, Mr D., Ty'r Ysgol, Rhandirmwyn, Llanymddyfri, Sir Gaerfyrddin SA20 0PA, Wales
* Dickens, Mr J.C., 79 Habberley Road, Kidderminster, Worcestershire DY11 5PN
* Dutta Choudhury, Mr M., c/o 5.5 Automobiles (MRF Tyres), Jilchor Road, Korimganj, Assam 788711, India
* Edgar, Mr I.R.H., Hendre, Abererch, Pwllheli, Gwynedd, Wales
** Edgington, Prof. J.A., 19 Mecklenburgh Square, London WC1N 2AD
* Eldridge, Dr H.W., 33 Bronescombe Avenue, Bishopsteignton, Teignmouth, Devon TQ14 9SR
* Faulkner, Mr J.M., 314 Beech Hill Road, Hopkinton, NH 03229, USA
* Fenwick, Mr J.D., Stonehouse, Arthington Lane, Pool-In-Wharfedale, West Yorks. LS21 1JZ
* Fernando, Dr M.L.B.H., Peragas Handiya Road, Ulhitiyawa, Wennappuwa, Sri Lanka
* Figueiredo, Dr E., R. Manuel Murias 7 - 1 FRT, 1500 - 418 Lisboa, Portugal
* Forrester, Mr D.J., 19 Idmiston Sq., Worcester Park, Surrey KT4 7SX
* Ghullam, Mrs M.P., 5 Beech Drive, Cromer Road, North Walsham, Norfolk NR28 0BZ
* Goodwin, Mr D., 128 Shay Lane, Walton, Wakefield, West Yorks. WF2 6LB
~ Grantham, Mr M.A., 1254 64th St, Emeryville, CA 94608 - 1105, USA
* Gray, Mr P.J., White Knights, Belle Grove Place, Spital Tongues, Newcastle-Upon-Tyne, Tyne and Wear NE2 4LH
* Green, Mr M.L., 80 Landor Road, Whitnash, Leamington Spa, Warwicks. CV31 2JY
* Harris, Mr N. & Mrs S.T., Woodlands, Blindcrake, Cockermouth, Cumbria CA13 0QJ
* Haughton, Mr A.R., 'Fernleigh', 75 Sunnybank Road, Griffithstown, Pontypool, Gwent NP4 5LN, Wales
* Henderson, Miss A.L., 39 St Andrews Road, Collegefields, Shrewsbury, Shropshire SY3 6BH
* Higgs, Mrs P.A., 15 Davis Road, Willenhall, W. Midlands WV12 5HA
~ Hilsden, Dr E., Hafod-y-Bryn, Llanyre, Llandrindod, Powys LD1 6EA, Wales
* Hughes, Mr R.P., 218 Mashie Drive, Nacogdoches, TX 75964, USA
* Hughes, Mr E.O., 17 Gillian Drive, Rhyl, Denbighshire LL18 4TB, Wales
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cont.

MEETINGS PROGRAMME 2001

Meetings Secretary: P.J. Acock
Meetings Subcommittee: R.G. Ackers, N.J. Hards, J.M. Ide, A. Leonard, P.H. Ripley

Sat. 3 March — **Spring Indoor Meeting & AGM – Cambridge**
Location: Gilmour Building, Cambridge Botanic Garden
Leader: Graham Ackers

Fri. 30 Mar. - Mon. 2 Apr. — **Long Weekend Field Meeting – Guernsey**
Centre: New Vazon Bay Hotel, Castel
Leaders: Trevor Taylor & Andrew Leonard

Sat. 23 - Sun. 24 June — **Long Weekend Field Meeting – Cornwall**
Centre: St Columb Major Leader: Ian Benallick

Mon. 23 - Thurs. 26 July — **Symposium: Fern Flora Worldwide, Threats and Responses**
Location: University of Surrey, Guildford
Coordinators: Graham Ackers & Clive Jermy

Sat. 28 - Tues. 31 July — **Long Weekend Field Meeting – Southern Lake District**
Centre: Grasmere Leader: Mike Porter

Thurs. 16 - Sat. 18 Aug. — **Southport Flower Show: BPS Stand**
Further Info.: Matt Busby

Sat. 8 Sept. — **Day Visit – Wakehurst Place & Loder Valley, Sussex**
Leader: Paul Ripley

Sat. 3 Nov. — **Indoor Meeting – The Natural History Museum, London**
Leader: Jennifer Ide

January 2002 — **Chile**

June 2002 — **Edinburgh District**

For further details of these and other meetings of interest to members, including information on accommodation, please see the separate Meetings Programme sheet. This can be sent to overseas members on request.

Regional Meetings

For details of additional meetings in the following areas, please contact the regional organisers, enclosing a stamped addressed envelope.

Leeds & District — B. Wright, 130 Prince Rupert Drive, Tockwith, York YO26 7PU
South-East England — P.H. Ripley, North Lodge, Dene Park Gardens, Shipbourne Road, Tonbridge, Kent TN11 9NS
East Anglia — B.R. Stevenson, Willow Cottage, Cowlinge, Newmarket, Suffolk CB8 9QB
North-West England — Mrs M. Garstang, Overbeck, Pennybridge, Ulverston, Cumbria LA12 7RQ
Cornwall — Miss R.J. Murphy, Shang-ri-la, Reskadinnick, Camborne, Cornwall TR14 0BH
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